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NOTE

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PENNSYLVANIA ANGLER

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EDITORIAL

Sportsmen Cooperate in Reducing Fish Kill

It has been definitely demonstrated and proven beyond a doubt that good fishing as a sport can be had in practically every county in the Commonwealth. It must not be understood from the above statement that fishing can be furnished for those who measure their success by the amount and number of dead fish they bring home as evidence of their prowess and ability as fishermen, but for those who love their fishing as a sport, the first statement in this article can be established.

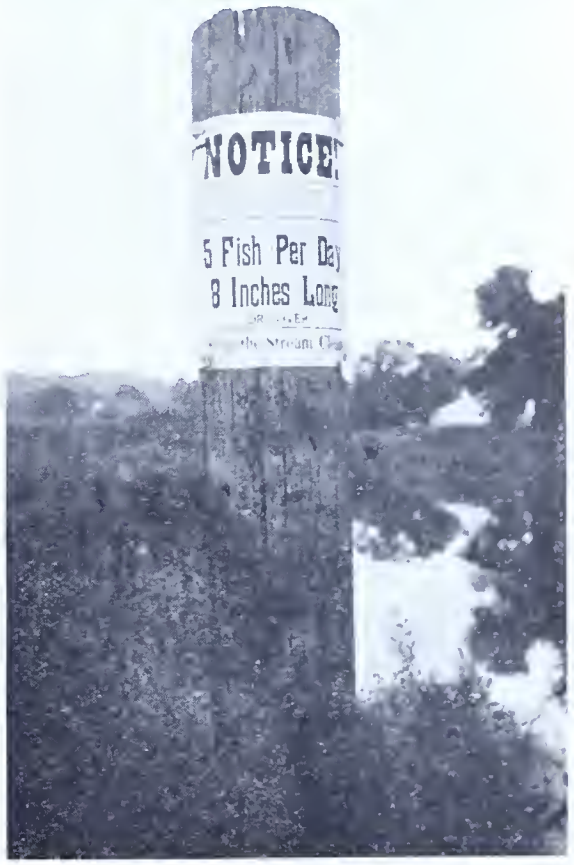
Since the Spring Creek Project was opened in the spring of 1934 there have been over 15,000 visitors and with the exception of a very few individuals who were not satisfied with the number of trout they were allowed to kill and take away, the project has proven entirely satisfactory and is endorsed by 99% of those who have enjoyed the privileges and excellent sport that has been furnished. However, as I view it from my contact with the fishing fraternity throughout the State, the greatest benefit and value perhaps is resulting in many similar projects being established locally through the State, by the local sportsmen, and when I give credit to the sportsmen, I mean it, as these projects have been set up and inaugurated by those who love their fishing from the sporting angle.

The accompanying photograph is a typical notice of many similar ones throughout the State. This particular one was gotten up by the Izaak Walton League of Kennett Square, near Philadelphia. A group of newly formed Waltonians were enthusiastic about such a project and got busy on improving the White Clay Creek, and then set up the limits as will be observed on the notice. Fishing was limited to artificial lures with the barbs pressed down, and this project has proven satisfactory beyond any doubt by the results obtained and a number of letters which I have received from the devotees of this sport. I have a number of letters from men who caught as high as 172 trout during the season and killed only 8, another reports having gotten 143 and killed 9. Another very interesting one comes from a gentleman who just recently became a naturalized citizen and who was an ardent bait fisherman and killer. He states in his letter his main object was to catch as many fish as he could take home. This man writes me that he was converted to the use of artificial lures, particularly fly fishing, last year and for the first time experienced real sport in his fishing. He writes me that a fly fisherman has it all over the bait fisherman in that he has something to keep him busy the twelve months of the year. After the fishing season closes and the winter comes on he is enjoying his new love by tying flies, making leaders, and this winter expects to make himself a real fly rod.

At Ebensburg, Cambria County, the boys enjoyed the first real trout fishing they have had in 25 years, after a group of four or five got permission from the local water company to improve the small stream from which the city supply of water is taken. This was done in a very fine and efficient manner, after which we stocked the stream as heavily as we felt it should be and restrictions were set up permitting fishing only during the daylight hours and a limit of four trout per day could be killed.

In Delaware County under the leadership of Phil Platt and other Waltonians they secured permission from land owners along Ridley Creek to set up certain restrictions. This, too, has resulted in producing the finest and best sport the trout fishermen have had in that section of the State in many years.

I could go on citing many other examples throughout the State that have been both practical and instructive, and I dare say that from the results obtained and inquiries we are receiving at the Harrisburg office that many more groups through the State will be doing likewise. In this way sport can be furnished for the sportsmen without a great deal of effort and so long as they play the game as sportsmen, really good fishing can be assured. For projects of



this kind, as in most other constructive work, the burden usually falls on a very few, who in most cases I have found to be not interested to their own selfish ends, but rather that sport may be provided for others. Yet in many cases these men who do things are the butt of criticism of those who usually find fault with most things that are constructive and which require a great deal of effort on the part of comparatively few.

It can be done, as has been determined and the only thing that remains to be seen is whether we want good fishing as a sportsman judges it. If we do, it can be had as we are only too anxious to assist in every way we can in the promotion of all such efforts.

O. M. Dribben

Commissioner of Fisheries

Pennsylvania Record Fish for 1935

IN reviewing the 1935 fishing season, one fact stands out: it was a bass fisherman's year. True, nice catches of trout were made on many waters, in spite of inclement weather and heavy rains that prevailed in the trout areas during much of the season. It was also an average year for the sucker fisherman; for the angler who derives pleasure in fishing for panfish such as the catfish, yellow perch and sunfish, and for the troller whose specialty is the wall-eyed pike or Susquehanna salmon. Pickerel catches were about normal, although the usually excellent fishing for these game fish in northeastern Pennsylvania ponds and lakes fell off during the autumn months. The bass fishing, therefor, may be considered an outstanding feature in an otherwise average fishing year.

To present a broad picture of the season, it is essential that we start with the first hook and line fishing of the season, winter and early spring sucker fishing. Probably no other form of angling attracts so many fishermen to Pennsylvania inland waters as does still-fishing for suckers. Generally regarded as the greatest sucker fishing area in Pennsylvania are the central counties, drained by the Juniata River and its tributaries. Vast runs of suckers in virtually all of the feeder streams to the Juniata and its Raystown Branch occur each spring, but 1935, from the catch angle in this territory, was below par. Ranking as the leading sucker fishing waters were streams in Franklin and Fulton Counties, the upper Delaware River in the vicinity of Milford, Pike County, and the North Branch of the Susquehanna River. The largest sucker reported caught was that taken by Guy Bond of Malvern, a fish 22 inches in length and weighing 3 pounds, 12 ounces.

The Trout Season

Unusually high water at the opening of the trout season in mid-April greeted the trout fishermen. Many of the largest streams, the Loyalsock in Lycoming County, Fishing Creek in Clinton County, Spring Creek, Bald Eagle and Penn's Creek in Centre County and the Lackawaxen in Pike and Wayne were extremely high for first-day anglers. This condition prevailed generally until well into May. An abundance of natural food washed from the stream banks and cold weather were also major jinxes for the early fishermen.

In comparison to the 1934 trout season, when three mammoth brown trout, ranging in weight from 7 pounds 15 ounces to 9 pounds 7 ounces, topped the list, the largest brownie caught was that creeled in famous Brokenstraw Creek, Warren County, by Duard May of Corry, Erie County. It measured 26 inches in length and tipped the scales at 6 pounds, 12 ounces.

One class stands out in the trout division, artistocrats of troutdom in the minds of many anglers, our crimson spotted native brook trout. And to two boy anglers go first honors in the brook trout record annals. It remained for John Lucas, 14 years old, of Mildred, Sullivan County, to land a brookie reminiscent of the days before the log drives. Fishing in Glass Run, a tributary to famous Loyalsock Creek, he creeled a brook trout measuring 20 inches in length, 12¼ inches in girth, and weighing 4 pounds. This magnificent specimen fell to the lure of a minnow. A nightcrawler was the bait used by Charles Wild, Jr., of Johnstown. Fishing in Clear Shade Creek in Somerset County, Charles, who is 16, caught a brookie measuring 19 inches in length that virtually equaled the weight of the Glass Run fish. A 17-inch brookie, weight and girth not given, clinched third place. It was caught by William Zeigenfuss of Martins Creek in Martins Creek below Bangor.

Lehigh County again this year produced the largest rainbow trout reported. It was a 19½-inch fish, weighing 3 pounds, 14 ounces, caught in Little Lehigh Creek near Allentown by Warren Yeakel of Allentown on opening day.

Many big brown trout were reported. The one crowding May's catch in the Brokenstraw most closely was taken on a minnow in Yellow Breeches Creek, Cumberland County, by Wayne Long of New Cumberland. This fish measured 26 inches in length and weighed 6 pounds, 8 ounces.

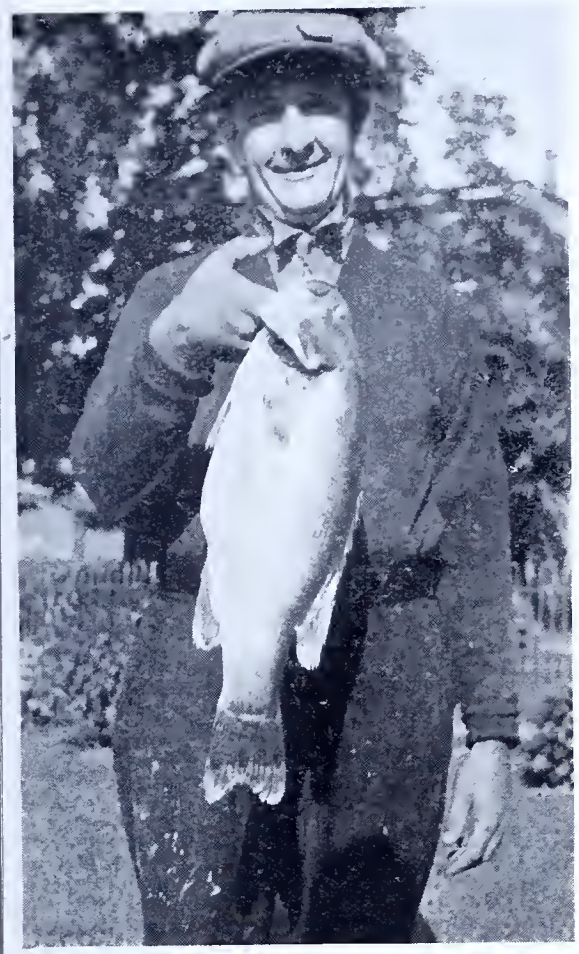
Perhaps the most thrilling catch of a big brownie was made on dry fly and extremely light tackle in Penn's Creek by J. K. Ebert of Sunbury. The fish, 22 inches long and weighing 4 pounds, was taken in fast water. So viciously did this Penn's Creek brownie battle for freedom that once, during the fight. Ebert was caught off balance and sprawled headlong in the stream.

A Banner Bass Season

And now we come to the outstanding feature in Pennsylvania fishing for 1935, the season for smallmouth bass and largemouth bass. Any bass fisherman knows that a black bass of three pounds weight or better is capable of providing thrills enough in ten

DR. J. N. SHIPLEY AND H. D. HERSHEY, OF ERIE, WITH THE 1935 RECORD MUSKIE

PHOTO—COURTESY "ERIE DAILY TIMES"



WALTER TANEY WITH A 5-POUND SMALLMOUTH BASS FROM THE PERKIOMEN CREEK

minutes at the end of a line to make up for six months of monotony. And plenty of three-pounders or better were reported.

First, let us check the records. We find the smallmouth class at a new high. Fishing with a light bait casting lure in the Susquehanna near Harrisburg, Elmer Lower of New Cumberland set a mark that is going to require plenty of competition to equal. He was tested to the limit in landing this giant river smallmouth bass, a fish measuring 22½ inches in length and weighing 6 pounds, 3½ ounces. It tops by 11½ ounces the 1934 record smallmouth.

While we're on the subject of smallmouth bass fishing, doff the old fishin' hat to one of the finest bass producers in 1935, beautiful Perkiomen Creek in Montgomery County. Old time bass fisherman in southeastern Pennsylvania this year had cause aplenty to compare the Perkiomen with its glory as a bass producer years ago. It produced some of the topflight smallmouths of the season. There was, for instance, the catching of a 5 pound, 5 ounce smallmouth by Christian Bickhart. On the day he creeled the big fellow, Christian landed five others, all of them over 18 inches in length. Walter Taney of Norristown, however, gave Biekhart a stiff run for first honors with a 21-inch smallmouth tipping the scales at five pounds even.

Writes Warden Harry Cole of Norristown: "There were more large bass taken from my section this season than have been caught in the last 15 years. That is the report given to me by a number of old fishermen. I have seen quite a number of them myself. By far the greater number of them eame from the Perkiomen Creek. There were numbers of them taken between 3 and 5 pounds."

ANGLER HONOR ROLL
Record Fish, 1935

RECORD BROOK TROUT

Caught by John Lucas, Mildred, Sullivan County, in Glass Run, Sullivan County. Length 20 inches, girth 12¼ inches, weight 4 pounds. Lure used—minnow.

★

RECORD BROWN TROUT

Caught by Duard May, Corry, Erie County, in Brokenstraw Creek, Warren County. Length 26 inches, weight 6 pounds, 12 ounces. Girth not given. Lure used—not given.

★

RECORD RAINBOW TROUT

Caught in Little Lehigh Creek, Lehigh County, by Warren Yeakel, Allentown. Length 19½ inches, weight 3 pounds, 14 ounces. Girth not given. Lure used—angleworm.

★

RECORD SMALLMOUTH BASS

Caught by Elmer Lower, New Cumberland, in Susquehanna River, Cumberland County. Length 22½ inches, weight 6 pounds, 3½ ounces. Girth not given. Lure used—light bait easting lure.

★

RECORD LARGEMOUTH BASS

Caught by Bill Ingham, Kingston, in Lake Carey, Wyoming County. Length 28 inches, weight 8 pounds, 8 ounces. Girth not given. Lure used—plug.

★

RECORD PICKEREL

Caught by Costie Borsavage, Plymouth, in Lake Wallenpaupaek, Wayne County. Length 28 inches, weight 6 pounds, 4 ounces. Girth not given. Lure used—live minnow.

★

RECORD MUSKELLUNGE

Caught by H. D. Hershey, assisted by Dr. J. N. Shipley, Erie, in Presque Isle Bay, Lake Erie. Length 51 inches, girth 23 inches, weight 35 pounds. Lure used—trolling rig.

★

RECORD WALL-EYED PIKE

Caught by Andrew Anthony, Cementon, in Upper Delaware River. Length 30 inches, weight 9 pounds. Lure used—trolling rig.

★

RECORD CALICO BASS

Caught by Charles Buss, Honesdale, in Perkins Pond, Wayne County. Weight 2 pounds, 4 ounces. Length and girth not given.

★

RECORD BULLHEAD CATFISH

Caught by Eli Solar, Harrisburg, in Wildwood Lake in the suburbs of Harrisburg. Length 18 inches, weight 4 pounds, 8 ounces.

★

RECORD SUCKER

Caught by Guy Bond, Malvern, Chester County. Length 22 inches, weight 3 pounds, 12 ounces.

★

RECORD CARP

Caught by Edward Alexis, Kingston, in North Branch of Susquehanna River. Length 38 inches, weight 40 pounds.

BEN LUCAS, OF EYNON, EXHIBITS HIS BIG LARGEMOUTH BASS (LEFT) FROM WALLENPAUPACK

Then, of course, to speak of smallmouth bass would be a sacrilege here in Pennsylvania unless we mentioned that peerless smallmouth stream, the North Branch of the Susquehanna River, and its rivals the upper Allegheny and Raystown Branch of the Juniata. Topping the Allegheny catches was a smallmouth weighing 5 pounds 2 ounces, taken by E. P. Updegraff of Wilkinsburg.

But the bass season was by no means monopolized by smallmouth bass catches. November fishing in Lake Carey, Wyoming County, produced the record largemouth of the season, a fish measuring 28 inches in length and weighing 8 pounds 8 ounces. This fish equals last year's record, a largemouth caught in Harvey's Lake, Luzerne County. It was caught by Bill Ingham of Kingston.

Lake Gordon in Bedford County held its place as a largemouth producer by yielding two splendid bass. Carl Walters, secretary of the Federation of Sportsmen in Bedford County, made a catch well worth placing in any record fish checkup. He landed a fighting 23-inch largemouth weighing 6 pounds on a light fly-rod with spinner and barbless hook. Noah Nazlerod of Centreville caught a largemouth in the lake that weighed 6 pounds 8 ounces.

Dominic Alhanesie of Scranton went hunting one day in November near Lake Wallenpaupack. The fishing fever gripped him, however, so he laid aside the gun and forthwith landed a largemouth weighing 6 pounds 8 ounces.

Fishing in Conneaut Lake, Harry Benninhof of Meadville scored with a 20½ inch largemouth weighing 5 pounds 4 ounces.

Runner-up in the largemouth division was a 23-inch largemouth bass from Lake Wallenpaupack caught by Ben Lucas of Eynon.

(Please turn to next page)

HEAD-ON VIEW OF BEN LUCAS' LARGEMOUTH BASS

CARL WALTERS WITH HIS LARGEMOUTH BASS FROM GORDON

COSTIC BORASAVAGE DISPLAYS HIS RECORD PICKEREL AND A FINE LARGEMOUTH BASS

RANGER CLUB MEMBERS WITH THE RECORD PIKE CAUGHT BY THEIR PRESIDENT, ANDREW ANTHONY

It weighed 6 pounds, 10 ounces and had a girth of 18¾ inches. He also landed a smallmouth bass 20¾ inches in length, 15⅜ inches in girth and weighing 4 pounds, 8 ounces.

Tying Lucas' largemouth was another bass of the same species from Wallenpaupack. It was caught by Costic Borsavage of Plymouth, who had the distinction of catching the record pickerel of the year on the same day.

Space will not permit listing all of the other catches of bass over three pounds in weight reported in 1935 to the ANGLER. We'll sign off on the bass section of this report just by repeating it was a bass fisherman's year.

Pickerel and Wall-Eyed Pike

When Costic Borasavage caught his record pickerel in Wallenpaupack, he was fishing in September with live minnows. The pickerel, 28 inches long, was a heavily built fish weighing 6 pounds 4 ounces.

Frank Seas' record 1934 wall-eyed pike, with its astounding weight of 13 pounds 8 ounces and length of 34 inches, was not challenged this year. While many fine wall-eyes were taken, the largest fish reported to the ANGLER, and a dandy, at that, was taken in the Upper Delaware near Dingman's Ferry. Andrew Anthony of Cementon, who made the catch, had action aplenty before finally boating this fish, 30 inches in length, and weighing 9 pounds.

The muskellunge division, "water tiger division," if you don't mind, was topped by a giant Lake Erie muskie, the largest to be brought into Erie in several years. It was landed after one hair-raising battle of 40 minutes by H. D. Hershey assisted by Dr. J. N. Shipley, both of Erie. The big fish weighed 35 pounds, was 51 inches long and had a girth of 23 inches. And, at that, they say there are bigger ones in Presque Isle Bay.

Runner-up to the Presque Isle "tiger" was a Lake LeBoeuf, Erie County, muskie 47 inches in length and weighing 25 pounds, 6 ounces. It was caught by George Gaub, of Meadville.

Pennsylvania this year had more carp fishermen than ever before. Right in the class of the biggest fish of the year was a 40-pound carp taken on the North Branch by Ed Alexis of Kingston.

Suburban Harrisburg's Wildwood Lake yielded a bullhead catfish to Eli Solar of the Capital City that easily captured first place in this division. It weighed 4 pounds, 8 ounces.

MAX STERFURSKI CAUGHT THIS 4 POUND, 10 OUNCE SMALLMOUTH IN LAKE COXTON, WAYNE COUNTY

Editor's Note: In presenting this list of record fish taken from Pennsylvania waters during 1935, it should be emphasized that the catches listed rank as largest in the species reported. Perhaps you may know of bigger trout, bass or other game fish. If you do, the ANGLER *will appreciate your comments and possibly photos.*

"Frog-Headed" Carp— Carp Angler's Note

When Paul Pressel of York caught a carp with a head resembling that of a frog this autumn, it stirred plenty of comment in carp fishing circles in York and Adams Counties, according to J. Richard Stover, secretary of the York and Adams Game and Fish Association.

"One of the members of our Association saw this fish which was a scale carp," he writes. "He described it as follows: 'This fish with the exception of the head was just like any other carp. The head, which Mr. Sipe said is formed like a frog's head, was flat and broadened, did not contain scales, and was the color of a catfish head.' When asked what in his opinion was responsible for the odd-shaped head of this fish, he replied: 'Well, if you ask me, I think it must have ran its head into the pier of the Richland Avenue bridge during the high water last summer,' Perhaps this was about as good a reason as any member would have cared to venture, and much applause ensued."

Secretary Stover also informs us that during November the Association stocked 70 cans of large bullhead catfish in the Conewago Creek, between East Berlin and Strinestown.

If You Would Catch More Fish, KILL LESS!

By KENNETH A. REID
Member, Board of Fish Commissioners

THE new slogan of the Fish Commission—IF YOU WOULD CATCH MORE FISH, KILL LESS!—is more than a mere catch phrase. It is a plain statement of a cold fact that confronts us, which unfortunately some fishermen do not yet realize. The old slogan stressed the observance of the law as the means to better fishing. In adopting the new slogan we are not forgetting the importance of law observance, but calling attention to an additional factor that has an even greater bearing on the future of our fishing.

The somewhat general impression that the law violator is the greatest single obstacle, if not the sole one, between us and the kind of fishing that we would like to enjoy, is in our opinion largely erroneous. Granting that in isolated instances this may be true and that we should in no way let up on our efforts to stamp out this common sneak thief like noxious vermin, a little simple arithmetic will readily show that even if we are able to completely exterminate the breed and have no law violations whatever, that there might easily be no apparent difference in the fishing picture unless we definitely controlled some other factors affecting it.

Take our trout as a typical illustration. Conservatively, we have in Pennsylvania something over 400,000 fishermen. It seems fair to assume that 150,000 of these fish for trout, and if each of these fished just one day and caught the legal limit of 15 and then threw his tackle away, they would account for 2,250,000 trout—nearly a million more than our best year's production of legal size trout. But most fishermen don't buy a license for just one day's fishing. If this group fished six days during the 91 days of open trout season and each man killed his limit, each of the six days, it would mean the removal of 13,500,000 trout from our waters—or ten times our best annual production—if the streams would support anything like that number to be caught in a single year. So you can readily see that without a single violation of the law, it would be *legally* possible to keep our streams fairly barren of trout.

Practically every community has one or more men who have a local reputation as expert fishermen. When they go fishing they get the limit, and their neighbors know it because they bring home the dead fish as proof of their prowess. Then after they have earned this reputation, they feel that it must be protected by bringing back more limits of dead fish. They fish a great many days throughout the season, for it takes a lot of practice to become a really expert fisherman. They may use either fly or bait, fine tackle or a cut pole, and many of them boast of killing from one to three or four hundred trout in a single season—and they masquerade as sportsmen to boot!

Compared to the hundreds of vainglorious

DO YOU WANT A SPORTSMAN'S CREEL—LIKE THIS

egotists of this stripe, the deliberate violators are small fry and unimportant vermin in the human category. The man who fishes practically every day during the season, kills every fish that is legal, and boasts about his prowess is the worst enemy of better fishing in Pennsylvania, and should be classed as the A1 vermin. Even though he may have stayed entirely within the law, he has violated every principle of decent sportsmanship and should be socially ostracised by every true sportsman.

But the "expert fish hog" is not the only human factor in the legal fishing category that adversely affects our fishing. For every one of them there are a dozen or a hundred less expert fishermen, some of whom are striving to build up such a reputation, and many of whom like to bring home a "nice mess of fish" as often as they can, and who shoot at the daily limit as par on the fishing course. In the aggregate, these less expert fishermen account for a tremendous number of fish which are removed from the waters and hence from the realm of future sport possibilities.

The sportsman-angler is in an enviable position in that he can enjoy his sport to the fullest without killing the source of that sport if he uses an artificial fly or other artificial lure and handles his fish carefully. In this respect he has a great advantage over the sportsman-hunter, who cannot release his game after he has shot it. He can have all the thrill of the rise, the battle and the landing of the fish, and the additional satisfaction after he has carefully released it of knowing that he is doing his part in the better fishing program—a satisfaction that goes much deeper than the vain pride of the egotist, who kills his fish to prove that he caught them.

Of course we do not mean to recommend that all fish be returned to the water, but a great number that are now being kept must be released if we are to have a real improvement in fishing. This is not an idle theory, but a sound fact that has been amply demonstrated by the experience at the Spring Creek Project during the past two years. Without the special restrictions at Spring Creek the fishing would not last two weeks; with them it has not only lasted two years, but has constantly improved.

Mr. Fisherman, the problem is squarely up to you. If bringing home the maximum number of dead fish that the law allows or your ingenuity enables you to extract from the streams means more to you than greatly improved sport next year, you may rest assured that there will be no material improvement, for you can take them out of the streams faster than your Board and Mother Nature combined can replace them; but if you keep only an occasional good fish and use the daily creel limit as a season limit, we can definitely promise you greatly improved fishing. The road is clear, the theory proven, and it is now up to you—and that is why we repeat: IF YOU WOULD CATCH MORE FISH, KILL LESS!

OR "LIMIT CATCHES"—LIKE THESE?

Bigger Bass

By CHARLES K. FOX

IF the pages of history were turned back several decades, one would find all the streams in Penn's Woods teeming with fish. Many large bass could then be caught, but even today, with our army of fishermen, pollution and deforestation to decrease the supply, large bass can still be taken, if the proper tactics are employed. Let the 1935 record of bass catches by a group of casting enthusiasts speak for itself:

Weight 6 lbs. 3½ ozs., length 22½ inches—Susquehanna River, by Elmer Lower; weight 5 lbs. 4 ozs., length 21 inches—Susquehanna River, by Charles Fox; weight 4 lbs. 6 ozs., length 21½ inches—Susquehanna River, by Vincent Rife; weight 4 lbs. 3 ozs., length 20½ inches—Conewago Creek, by Wayne Long; weight 4 lbs. 2 ozs., length 20½ inches—Susquehanna River, by Ray Long; weight 4 lbs., length 20¼ inches—Conodoguinet Creek, by Charles Fox; weight 3 lbs. 12 ozs., length 21 inches—Shermans Creek, by Merl Brown; weight 3 lbs. 12 ozs., length 19 inches—Conewago Creek, by Charles Fox; weight 3 lbs. 12 ozs., length 18¾ inches—Susquehanna River, by Elmer Lower; weight 3 lbs. 4 ozs., length 18½ inches—Susquehanna River, by Lambert Miller; weight 3 lbs., length 18 inches—Susquehanna River, by Clair Snell; weight 3 lbs., length 17 inches—Susquehanna River, by William Miller.

Upon scanning this list, questions immediately arise, how did these lucky fishermen make such catches, is there any trick to it, what kind of bass did they catch? Well, the truth of the matter is simply this: these men are enjoying a comparatively new form of sport, light lure bait casting. Yes, just simply plugging with small plugs, lures ¼ to ½ ounce in weight. All the bass are smallmouth black bass. Look at the results, yet most of these fellows are in their first year of casting. They have stopped fishing with live bait and have substituted a more productive, fascinating and sportier game.

Almost within the shadows of the state capitol buildings, actually within the Harrisburg City limits, a huge bass was hooked but broke away with the plug when he was roughed too much in very fast water. Five days later a thin, worn bass 21½ inches in length weighing four pounds six ounces was landed from the same spot. The mouth on one side had previously been badly torn. Our guess is that this fish had broken away with the lure, snagged the free hooks on a rock or log, ripped his way to freedom only to fall a victim to a similar dupe. In good physical condition, this bass would have gone over five pounds.

After the river had cleared from the northern floods the water was still very high. One evening two fishermen went into the middle of the river between Steelton and New Cumberland and plugged over grass patches that are ordinarily islands, but were submerged in about three feet of water. One was plugging for the first time. During the trials and tribulations of learning to thumb a spool and disentangle backlashes he hooked and landed a bass which broke all local records and which may prove to be the largest smallmouth taken in the state this past season. The fish weighed six and one-fourth pounds and was twenty-two and one-half inches long. The lure used was a standard pork rind rig with a spinner and white bucktail, but no pork rind.

SMALLMOUTH, 5¼ POUNDS, TAKEN FROM SUSQUEHANNA BY THE WRITER

Down stream less than one mile is Hawk Rock, famous "salmon" and bass water of yesterday. It is now staging a comeback in spite of the fact that on the eastern side is polluted water. We were using a plug which is a local favorite. It is constructed of a transparent composition and has a lively wiggle. As this lure was working slowly and deeply between two ledges a hefty bass took it. The fight which ensued was the hardest and most spectacular we have ever experienced. It must have been at least fifteen minutes before he was too weak to make any more jumps and runs and we were able to lift him into the boat by his lower lip. He could barely move, yet his spiny dorsal fin bristled in defiance; the heart was willing but the flesh was weak. This bass of five and one-fourth pounds was much stronger, faster, and more resourceful than a four-pounder over twenty inches in length which took our lure in the Conodoguinet several weeks previous to this.

Last spring, Wayne Long caught one of the largest trout taken in the state and the best in the Central Pennsylvania sector, when he and his brother landed a six and one-half pound brownie from the Yellow Breeches Creek. He made a bid for bass honors by outwitting a four and one-fourth pound scrapper from the Conewago in York County when the creek was very clear. This stream is frequently muddy and rarely crystal clear, but when either condition exists it is most difficult to catch bass. The lure was his favorite, a small sinking minnow with a propeller fore and aft. To keep pace with Wayne, brother Ray finally caught a bass better than four pounds after having some tough luck with several other big ones. He used a weighted bucktail and spinner which was designed for Southern largemouth bass fishing, but in its smallest sizes has proved to be just about the top for Pennsylvania's fast water smallmouths.

A long trim bass, built much like a trout, is the only one on the list from Sherman's Creek. This fish came from a part of the stream where there was no large pool or deep water, a fact which may account for its slenderness. In contrast, we once saw a blocky fourteen-inch smallmouth, also three and three-fourths pounds, taken from a Canadian lake. However, this is not a representative type from Sherman's Creek for we have seen perfectly proportioned specimens caught in some of the beautiful pools of this ideal stream.

SOME OF THE TROPHIES—SEVEN BASS AND ONE WALL-EYED PIKE

CHARLES FOX WITH A FOUR POUNDER FROM THE CONODOGUINET CREEK

Generally speaking, count on the excellent pools to carry the best fish of the stream. Just because you do not know of big bass being hooked or seen in fine water do not conclude there are not any there. Fish these prize spots at ideal times and with utmost care. We are particularly partial to overcast or drizzly days. It is also hard to beat the evening fishing at the close of a sunny day when the bass are definitely on the feed.

Leaders play an important part; in fact, in the capture of every one of these bass a casting leader was employed. They are cut from fifteen pound test artificial gut and carefully tied to the line and lure. One usually successful angler discontinued the use of this terminal tackle for several weeks and had poor results. Undoubtedly they are a great aid in "raising" educated fish. It is easier, or rather not as difficult to take bass from fast deep water such as that below a dam, than from the quiet pools. This is due to better camouflage and more lifelike action of the lure.

The catches listed here were made in very hard fished waters where for years bass over four or even three pounds have rarely been taken. The fishermen who made these catches live in the same small community (New Cumberland), fish the same places, and use similar assortments of lures. In addition to this is the startling fact that practically every local person who has seriously taken up light lure bait casting got his hooks into at least one big bass during the course of the season. One angler took thirty-nine over twelve inches in length from two stretches of the river. The theory that big fish take big lures may be correct, but there is a limit. After all, a one-half ounce minnow is a large minnow yet a half-ounce lure is considered a small lure. In the case of the smallmouth bass of our streams a smaller artificial is far more effective than the large blocky type of plug. Bait casting has not progressed nearly as far and as rapidly as fly casting, but during its evolution we shall see a decided trend to lighter tackle in general. The method used by these local Waltonians produced the finest results seen in this section since the days when the lower Susquehanna and its tributaries formed some of the greatest bass water the world over.

The ANGLER is indebted to LaMar Mumbar of Pennsburg for the splendid photo used as a front cover this month. Our readers may recall many other pictures taken by Mr. Mumbar which appeared in this publication. His photography is uniformly of the highest calibre and we feel fortunate in having his cooperation.

The Wissahickon— A Trout Stream

FAMED in legend and poetry, picturesque Wissahickon Creek, within the city limits of Philadelphia, is to become a trout fisherman's paradise. With allotment by the WPA of funds amounting to $11,000, work has already been started in the improvement of this stream. From above the Thomas Mill Road to the dam below Valley Green Inn, a distance of four miles, dams, current deflectors and covers are being built. Practical stream improvement, as advocated by the Fish Commission and carried out at the Spring Creek Project in Centre County, will feature the Wissahickon improvement work.

Intensely interested in this move to bring first rate trout fishing virtually to the door of the average Philadelphia fisherman, Hon. Edgar W. Nicholson, member of the Fish Commission, has been actively engaged in drawing up plans for the project. At the present time, the Wissahickon, while producing some trout fishing is sluggish in spots. Spring-fed, however, it offers abundant opportunity for practical improvement that will result from installation of deflectors and other devices.

In planning the work, emphasis was placed on using natural stones for the deflectors. Logs and other introduced cover will also be introduced with the thought not only of permanency but natural appearance. The swift eddies, swirls and pools that will result are expected to bear every resemblance to water on a mountain or meadow stream in more remote sections of the state.

Shore cover, so essential to every good trout stream, will add another wilderness aspect to this city trout water. And after the project is complete, brown trout will be stocked, fighting brownies that should furnish thrills aplenty to the fly fisherman as they swirl to the surface in response to the daintily floating dry fly.

The forage problem has already been considered on the Wissahickon. Brown trout, perhaps to a greater extent than either brook or rainbow trout, rely upon minnows and other small forage fishes as food. The Fish Commission, in preparation for stocking, has planted many minnows in this historic water. Installation of deflectors, covers and other improvement devices also tends to increase natural food supply. With abundant forage, cover, swift water, pools and eddies, there should be splendid fishing for trout in this stream.

"I want to emphasize one fact," Mr. Nicholson said recently. "This fine fishing starts next spring, not in 1937. We will stock with nothing but eight to nine inch trout, which are of course, well past the legal minimum in size.

"The rules, which I need scarcely repeat for sportsmen are these:

"Fly fishing only. No fishing (for any fish) in the Wissahickon outside the trout season. Daily limit of trout killed, five; season limit, thirty."

A feature of the improvement work now under way will be the V-type boulder deflectors, confining the current to a narrow channel at the apex of the V and scouring silt and mud from the bottom. Inverted V-types will spread the current below, much on the principle so successfully demonstrated at Spring Creek. Several hundred men are now at work on the project and most of the funds provided will be expended for labor.

ANGLERS MOURN PASSING OF VETERAN FRED KING

The death of Fred J. King, revered as dean of muskie fishermen in northwestern Pennsylvania angling circles, came as a shock to hundreds of his friends. Fred, who was 81 years old, passed away at his home in Waterford, Erie County, on November 15. During a lifetime exemplified by good sportsmanship, his one hobby was fishing for the giant muskellunge of Lake LeBoeuf, on the shores of which he lived.

It may be truthfully said that no fisherman in the state knew more about the "water tigers" than did Fred King. His account of the most thrilling battle he ever had with a muskie, which appeared in a past issue of the ANGLER, stirred many readers. Over 400 muskies, ranging in weight to 38 pounds, were taken by Fred during his life. If ever there was a "big game fisherman," Fred King deserved that title. And more than that, he was first, last and always a true sportsman.

Pennsylvania's great fraternity of anglers has lost a beloved member in the passing of Fred King.

MILLERSBURG GIRL LANDS PRIZE BASS

In a recent letter to the ANGLER, F. Park Campbell of Millersburg gives some interesting fishing news for the past year. It is featured by the catching of a fine smallmouth bass by Gladys Hammaker, 16, of Millersburg. While fishing in the Susquehanna River near Millersburg she landed a smallmouth bass weighing 2 pounds 15 ounces.

"Miss Hammaker has been catching bass for several years, and some nice ones, too," writes Campbell. "This is the first season, however, that she landed a prizewinner and the first season she was required to purchase a fishing license."

The accompanying cut shows her with the prize catch.

At the close of the bass fishing season, the prize fishing contests conducted by the Millersburg Hardware Company and Wilt's Store were ended and the winners were officially announced.

Winners in the Millersburg Hardware Company contest, the cash prize and weight of bass entered follow: Edward Hain, first prize, $25.00, 45 ounce bass; John Rumfelt, second prize, $10.00, 39 ounces; the late William E. Mumma, third prize, $5.00, 38 ounces; $1.00 cash prizes, Thompson F. Haine, 36-ounce bass; Elmer N. Hammaker, 34-ounce bass: F. Park Campbell, 31½-ounce bass, and Raymond Trutt, 25-ounce bass.

Winners in the Wilt Store fishing contest, their prizes of Shakespeare fishing tackle, and weight of bass are: Cecil Tyson, first prize, level winding reel, 51-ounce bass; Miss Gladys Hammaker, second prize, steel casting rod, 41-ounce bass; F. Park Campbell, first prize, string of five bass, totaling 123 ounces and averaging over 15 inches in length, steel casting rod, and Thompson F. Haine, second prize, string of five bass, totaling 110 ounces, and averaging over 14 inches in length, 100 yards Dollar Dandy silk casting line.

Seth Gordon Named Game Secretary

Appointment of Seth Gordon, nationally recognized wild life authority, as Executive Secretary of the Board of Game Commissioners by Governor George H. Earle, has met with widespread approval from sportsmen of the State. Mr. Gordon brings to the Game Commission an intimate, first-hand knowledge of wild-life conditions in Pennsylvania. In the field of practical conservation, he is without a peer.

Under the guidance of Seth Gordon, Pennsylvania's world famous game system achieved that enviable status. His name is synonymous with the drive to better wild life conditions not only in Pennsylvania but in the United States. It has been Pennsylvania's good fortune once more to place him at the game conservation helm.

The Board of Fish Commissioners extends to him best wishes for a successful administration.

WARREN FISHERMAN SCORES ON CARP

Charles Leonhart, of Shipmen's Eddy, better known to Warren fishermen as Dad Leonhart, caught many carp in the Allegheny during the past season, according to Warden R. C. Bailey, of Youngsville. Nineteen of these fish he landed ranged in weight from five to ten pounds. He also succeeded in catching 56 salamanders or waterdogs.

Some of the big trout taken by Warren anglers included a 24-inch, 4 pound, 6 ounce brownie from the Brokenstraw and a four-pounder from Tionesta Creek by Don Finley, Warren; a 22½-inch, 4 pound, 8 ounce brownie from the Brokenstraw by Clem Miller of Spring Creek, and a 19½-inch brownie from Spring Creek by James Mole of Corry.

CANNIBAL PICKEREL

Ed Miller and Bill Schuvin, of Scranton, has just taken a 25½-inch pickerel in Lake Wallenpaupack when Warden John Schadt happened along. They noticed a bulge in the fish, and on cutting it open, found that it had swallowed another pickerel 12½ inches in length.

FEMININE ANGLER LANDS BIG CARP

One of the most enthusiastic anglers for carp in Mount Carmel is Mrs. Walter Mann, according to Peter Patricoski of Mount Carmel.

While fishing in the North Branch of the Susquehanna River near Catawissa last season, she succeeded in hooking and landing a carp measuring 29½ inches in length and weighing 15½ pounds. The accompanying photo shows her with the catch.

LANDS TWO BASS AT SAME TIME

Angler Goldberg, of Pittsburgh, had the distinction of landing two bass at the same time in Lake Donahoe, Westmoreland County, according to Special Warden Darrell Hugan, of Pittsburgh. Writes Darrell:

"He was using two hooks baited with worm and minnow. His line started to run out, and when it stopped, he picked up the rod and waited until the fish started again. Then he set the hook. While playing it, another bass struck the other hook. He succeeded in landing both of them. One was 11½ inches long and the other 12½ inches. They were the only two bass caught that day. My friend, Carl Middlesworth and a friend of Mr. Goldberg saw him land them."

FISHING LICENSES REVOKED BY BOARD

Under the provisions of the Act of May 2, 1925, and the amendments thereto, the Board of Fish Commissioners at one of its regular meetings, revoked the fishing licenses of the following persons until after the date given below, and no licenses are to be issued to such persons until after that time.

Name	*Address*	*County In Which Violation Occurred*	*Revocation No.*	*Effective Until*
Charles James	Blanchard, Pa.	Centre	1	Dec. 1, 1936
James Yeager	Blanchard, Pa.	Centre	2	Dec. 1, 1936
Lyman Heeman	Homets Ferry, Pa.	Bradford	3	Dec. 1, 1936
Wilbur Johnson	Terrytown, Pa.	Bradford	4	Dec. 1, 1936
Jay Johnson	Terrytown, Pa.	Bradford	5	Dec. 1, 1936

TROUT STOCKED HEAVILY DURING NOVEMBER

Stocking of brook, brown and rainbow trout above legal size in preparation for the 1936 trout season featured the distribution program of the Fish Commission during November. Included in the stocking were 192,820 brook trout, 7 to 11 inches, 14,100 rainbow trout, 7 to 8 inches, 2,000 brown trout, 7-inch average, 63,435 catfish, 4 to 10 inches, 92,200 sunfish, 2 to 4 inches, 179,000 frogs, embryo stage, 200 bass, 3-inch average, 14,700 minnows, 2 to 3 inches, 150 pickerel, 11-inch average, 200 suckers, 18-inch average, and 60 yellow perch, 5-inch average.

Following are waters stocked in the various counties, and species planted in them.

Adams—catfish, Marsh Creek, Little Marsh Run, Chambersburg Water Co. Reservoir on Birch Creek, Bermudian Creek, Conewago Creek; sunfish, Chambersburg Water Co. Reservoir on Birch Run; frogs, Chambersburg Water Works Reservoir on Birch Run; rainbow trout, Chambersburg Water Works Reservoir on Birch Run; brook trout, East Branch Little Antietam Creek, Little Marsh Creek, Conococheague Creek, Conewago Creek.

Allegheny—catfish, Glen Willard Dam; sunfish, Glen Willard Dam; frogs, Glen Willard Dam.

Armstrong—catfish, Craig Run, Buffalo and Susq. Coal Co. Dam; sunfish, Craig Run, Buffalo and Susq. Coal Co. Dam; frogs, Craig Run, Buffalo and Susq. Coal Co. Dam.

Beaver—catfish, North Fork of Little Beaver River, Brush Creek, Little Beaver River; sunfish, North Fork of Little Beaver River, Brush Creek, Little Beaver River; frogs, North Fork of Little Beaver River, Brush Creek, Little Beaver River.

Bedford—catfish, Wills Creek; sunfish, sunfish, Wills Creek; frogs, Wills Creek; rainbow trout, Thomas W. Koon Lake.

Blair—catfish, Reighards Dam; frogs, Reighards Dam; brook trout, Big Fill Run, Canoe Creek, Bells Gap Run, Frankstown Branch on Juniata River, Pine Run.

Bucks—brook trout, Cooks Creek.

Cambria—brooktrout, Benns Creek, Stewart Run, Noels Creek.

Cameron—brook trout, Wykoff Run, Liek Island Run, Hicks Run; catfish, Pohopoco Creek.

Centre—rainbow trout, Spring Creek, Bald Eagle Creek; brook trout, Pine Creek, Penns Creek, Six Mile Run, Sinking Creek, Lick Run, Galbraith Gap Run, Laurel Run, Laurel Run or Potters Stream, Yost Run, Fields Run.

Chester—catfish, Fricks Lock, Potts Dam on Perkins Run, Beaver Creek, Bucks Run, Muddy Creek, East Branch Octoraro Creek, West Branch Brandywine Creek; brook trout, Valley Creek.

Clearfield—catfish, Hummel Pond; sun fish, Hummel Pond; frogs, Hummel Pond; brook trout, Trout Run, West Branch Montgomery Creek, Mosquito Creek, Curry Run, Anderson Creek, Bell Run, Montgomery Creek.

Clinton—brook trout, Baker Run, Big Fishing Creek, Kettle Creek.

Columbia—brook trout, Rearing Creek.

Crawford—catfish, Pymatuning Reservoir; sunfish, Pymatuning Reservoir; frogs, Pymatuning Reservoir; brook trout, Patrick Run, McLaughlin Run, Nagus Run.

Cumberland—catfish, Susquehanna River, Means Run, Hairy Spring Hollow Creek, Yellow Breeches Creek, Mountain Creek; frogs, Yellow Breeches Creek, Susquehanna River; brook trout, Hogestown Run, Trindle Spring, Old Town Run.

Dauphin—brook trout, Clarks Creek, Stoney Creek.

Elk—brook trout, Medix Run, Blair Creek, East Branch Clarion River, West Branch Kersey Creek, Wolf Lick Run, Crooked Creek, Mix Run, Straight Creek, Big Run, Wilson Run, Belmuth Run, Maxwell Run, Kersey Run, Spring Creek, Vineyard Run, East Branch Spring Creek.

Forest—catfish, Allegheny River; sunfish, Allegheny River; frogs, Allegheny River; rainbow trout, Coon Creek, West Hickory Creek, East Hickory Creek, Spring Creek, Hemlock Creek, Salmon Creek; brook trout, Spring Creek, Blue Jay Creek, Little Salmon Creek, Salmon Creek, North Salmon Creek, Maple Creek, Otter Creek, Beaver Creek, Lamentation Run, Little Hickory Creek, West Branch Blue Jay Creek, Watson Branch, Big Coon Creek, Hemlock Creek, Little Coon Creek, East Hickory Creek, Hunter Run, Minister Run, Ross Run, Fork Run.

Franklin—brook trout, Concocheague Creek.

Greene—catfish, Whiteley Creek, Dunkard Fork Creek, Muddy Creek, South Fork Wheeling Creek, North Fork Dunkard Fork Creek, Wheeling Creek, Peunsylvania Fork, Browns Fork Creek, South Fork Ten Mile Creek; black bass, Whiteley Creek; minnows, Whiteley Creek.

Huntingdon—brook trout, Sadler Run, Little Aughwick Creek, Black Log Creek, Tatman Run.

Creek, Little Chickies Creek, Little Conestoga Creek, Cocalico Creek, Wengers Dam on Conestoga Creek, Middle Creek, Conowingo Dam on Susquehanna River, Safe Harbor Dam on Susquehanna River; sunfish, Safe Harbor Dam on Susquehanna River, Middle Creek, Wengers Mill Dam on Conestoga Creek, Cocalico Creek; frogs, Cocalico Creek, Middle Creek, Wengers Mill Dam on Conestoga Creek, Conowingo Dam on Susquehanna River, Conestoga Creek; rainbow trout, Long Park Lake; brook trout, Tucquan Creek.

Lawrence—rainbow trout, Little Neshannock Creek.

Luzerne—brook trout, Wrights Creek, Wapwallopen Creek, Bowmans Creek, Pine Creek, Nescopeck Creek, Phillips Creek, Bolwards Run, Harveys Creek, Little Shickshinny Creek, Maple Creek, Meadow Run, Arnolds Creek.

Lycoming—brook trout, Pleasant Stream, Trout Run, Roaring Branch, Grays Run, Little Muncy Creek, Little Bear Creek, West Mill Creek, Big Run, Larrys Creek, Trout Run, Punketts Creek, Wallace Run, Blockhouse Run, White Deer Hole Creek, West Mill Creek, Black Hole Creek, Hogland Run, Wallis Run, Fourth Gap Run.

McKean—brook trout, Seven Mile Creek, North Branch Sugar Run, Kinzua Creek, Willow Creek, West Branch of Tuneneguent Creek, Chappell Fork, West Clarion Creek.

Mercer—brook trout, West Branch of Wolf Creek, Mill Creek, Lackawannock Creek.

Mifflin—brook trout, McKinley Run, Swift Run.

Monroe—brook trout, Tobyhanna Creek, Aquashicola Creek, Buck Hill Creek, Poho-

RAINBOW TROUT

Indiana—catfish, Yellow Creek, Little Mahoning Creek; sunfish, Yellow Creek, Little Mahoning Creek; frogs, Yellow Creek, Little Mahoning Creek; brook trout, North Branch of Little Mahoning Creek, Downey Run, Little Mahoning Creek.

Jefferson—frogs, Sportsmen's Run, Horn Run, North Fork Creek, East Branch Creek, Clear Creek, Callen Run, Speice Ruu, Little Mahoning Creek, Kyler Run, Sandy Creek, Sandy Lick Creek; brook trout, Clear Run, Callen Run, Little Sandy Lick Creek, Little Mill Creek, North Fork of Red Bank Creek.

Juniata—brook trout, Horning Run.

Lackawanna—brook trout, Choke Creek, West Branch Wallenpaupack Creek, Pond Creek, Lehigh River, Gardner Creek.

Lancaster—minnows, Safe Harbor Dam on Susquehanna River; catfish, Octoraro Creek, Conestoga Creek, Big Chickies Creek, Pequea

poco Creek, Big Bushkill Creek, Laurel Run, Buckwa Creek, McMichaels Creek, Pensyl reek.

Montgomery—catfish, Manatawney Creek, Towamenein Creek, Gulf Mill Creek, Perkimen Creek, Macoby Creek, West Branch Perkiomen Creek, Skippack Creek, Northeast Branch Perkiomen Creek; brown trout, Deep Creek.

Northampton—brown trout, Hokendauqua, Creek, Bushkill Creek; brook trout, Bushkill Creek.

Perry—catfish, Shermans Creek, Little Buffalo Creek, Buffalo Creek; sunfish, Shermans Creek; frogs, Shermans Creek; brook trout, Laurel Run, Carrol Run.

Pike—catfish, Wallenpaupack Lake; minnows, Wallenpaupack Lake, suckers, Wallenpaupack Lake; yellow perch, Wallenpaupack Lake; pickerel, Peeks Pond, Promise

A DEEP POOL ON THE LACKAWAXEN, WAYNE COUNTY TROUT STREAM

Land Pond; brook trout, Big Bushkill Creek, Kellam Creek, Little Bushkill Creek, Middle Bushkill Creek, Indian Ladder Creek, Twin Lakes Creek, Dingmans Creek, Shohola Creek, Sawkill Creek.

Potter—brook trout, Luddington Branch, Eleven Mile Creek, Dry Run, Cushing Branch, Fishing Creek, South Fork of First Fork of Sinnemahoning Creek, Nine Mile Creek, Lyman Run, Little Kettle Creek, East Fork of First Fork of Sinnemahoning Creek, Cross Fork Creek.

Schuylkill—catfish, Reiner Mine Holes No. 1, 2 and 3; brook trout, Little Catawissa Creek.

Snyder—brook trout, North Branch of Mahantongo Creek, Swift Run.

Somerset—rainbow trout, Laurel Hill Creek.

Sullivan—brook trout, Kettle Creek, Mill Creek, Muncy Creek, Elk Creek, North Branch Mehoopany Creek, Pigeon Creek.

Susquehanna—brook trout, Nine Partners Creek, Starrucca Creek, Harding Creek, Tunkhannock Creek, Upper East Branch Tunkhannock Creek, West Branch Lackawanna Creek, East Branch Lackawanna Creek.

Tioga—catfish, Corry Creek; frogs, Corry Creek; brook trout, Hills Creek, Bailey Creek, Tioga River, Mill Creek.

Union—brook trout, Spruce Run, White Deer Creek, Buffalo Creek, Spring Creek, Sand Spring Run, Rapid Run, North Branch Buffalo Creek, White Spring Run.

Venango—brook trout, Richey Creek, Panther Creek, Cherry Run, South Branch Sandy Creek, East Branch Sugar Creek, Middle Branch Sugar Creek.

Warren—rainbow trout, Farnsworth Creek; brook trout; Willow Creek, Mead Run, Little Brokenstraw Creek, East Hickory Creek.

Washington—catfish, Kings Creek, Krewers Dam, Laugloth Mill Dam, Aunt Clara Fork, Mingo Mine Strip Holes 1, 2, 3 and 4, Cross Creek, Buffalo Creek, Little Chartiers Creek, Ten Mile Creek; sunfish, Kings Creek, Krewers Dam, Laugloth Mill Dam, Aunt Clara Fork, Mingo Mine Strip Holes 1, 2, 3 and 4; frogs, King Creek, Krewers Dam, Laugloth Mill Dam, Aunt Clara Fork, Mingo Mine Strip Holes 1, 2, 3 and 4.

Wayne—catfish, Big Branch Dyberry Creek; brook trout, South Branch Calkins Creek, Johnson Creek, Calkins Creek, Lehigh River, Middle Creek, West Branch Lackawaxen River, Big Branch Dyberry Creek, Beaver Dam Creek, South Branch Equinunk Creek, Crooked Creek, Little Equinunk Creek, Babbittville Creek, Equinunk Creek.

Westmoreland—catfish, Mammoth Dam, Carpentertown Dam No. 1, Carpentertown Dam No. 2; sunfish, Mammoth Dam, Carpentertown Dam No. 1, Carpentertown Dam No. 2, frogs, Mammoth Dam, Carpentertown Dam No. 1, Carpentertown Dam No. 2.

Wyoming—brook trout, Beaver Run, Riley Creek, Bowman Creek, Mehoopany Creek, Meshoppen Creek, North Branch Mehoopany Creek.

York—catfish, Feiglers Ore Hole, West Branch Codorus Creek, Kohler Mill Dam, Bermudian Creek, Susquehanna River, Little Conewago Creek, Conewago Creek, South Branch Codorus Creek, North Branch Bermudian Creek; sunfish, Susquehanna River, Feiglers Ore Hole, Kohlers Mill Dam, West Branch Codorus Creek, Bermudian Creek, Little Conewago Creek; frogs, Susquehanna River, South Branch Cordorus Creek, North Branch Bermudian Creek.

GOOD TROUT CATCHES IN COLUMBIA COUNTY

In spite of unfavorable weather conditions during early season, trout catches in Fishing Creek, Columbia County, were good last year, writes A. A. Allegar, special warden. In general, the trout taken ran larger than any during recent years.

On April 27, Stanley Gingher of Berwick caught 19 trout from Fishing Creek near Camp Lavigne, while his partner, Charles Lewis landed twelve. This was, of course, prior to the cutting of the creel limit to 15 trout in one day.

A brown trout measuring 22 inches was taken by Bruce Smith of North Berwick from Fishing Creek near Benton.

Lester Stein of Hamburg, according to Warden Bill Wounderly, caught a brown trout in Lake Wallenpaupack on April 29 that measured 22 inches in length.

SETH SAYS

Right close ter the end o' huntin' season, we put some all-fired nice trout in the run gittin' ready fer April fishin'. They was brookies, an' the purtiest marked fish a feller'd want ter look at. Lively, too, an' fat an' right in trim for stockin'. Most o' them was around seven er eight inches long, but there was some every bit o' ten inches. They sure scooted from the cans in a hurry an' I'm missin' my guess if they don't winter fine.

A feller hears some talk now an' again 'bout how trout stocked in the fall don't git through so good. Well, I'm a-sayin' ef they're let alone, they got a right fair chance. O' course, I ain't sayin' thet mebbe mink an' coon don't take some ef the water's low, but the shape our run's in now, chances is all fer the trout. Plenty high an' even the little spring runs thet feed it hes plenty o' water.

Comin' right down ter brass tacks, thar's jest one varmint thet does most o' the damage to the trout, an' thet's the feller thet fishes without regard fer law er decency. How enny feller thet calls hisself a sport kin go out an' take trout er bass before season gits me. Us fishermen hes got ter pull together an' a few thet won't kin upset the applecart fer everyone. There ain't many do it, but fellers thet'll gig an' net trout kin soon spoil any crick fer the season.

Now then, I like as good as the next feller ter fish fer suckers, but what happened at the store t'other night sure did tickel Jerry Tims an' me. The boys got tergether an' decided thet next March when the sucker run starts, there's not a-goin' ter be one o' us fish in the trout cricks hereabouts. We figger we kin have all the fun we need right in the big crick an' at the mouths o' warm water runs without disturbin' our trout cricks by sucker fishin'.

I reckon thet there plan is goin' ter help all through this section. We're gittin' places in our aim fer better fishin', I'm sayin'.

Fly Fisherman Lands Waterdog

Of the surprise catches of the year, that made by F. M. Geer, veteran Warren angler, occupies top rank. Geer, according to Warden R. C. Bailey, was fly fishing for big brown trout at night. Suddenly he had a strike that was extremely puzzling. Whatever it was, the object at the end of the line seemed to give very little action although it appeared heavy.

His first thought was that he had hooked a bullhead catfish, but finally, when the catch was landed, he found to his amazement that it was a big salamander or waterdog.

SCORED TROUT CATCHES ON STONY CREEK

Ten members of the "Camp Alone" Club, located on Stony Creek, Dauphin County trout stream not far from Harrisburg, enjoyed fine fishing for brook trout during the 1935 trout season, according to Warden

Frank Sanda of Steelton. These veteran anglers and their guests succeeded in taking until May 4th, two hundred brook trout, ranging in length from 8 to 13½ inches. Flies and minnows were used as lures.

This group of sportsmen have a rigid conservation code. They have adopted as a size limit 8 inches for all trout retained, assist in carefully stocking the stream and are ardent advocates of stream improvement. Lewis Lickel, of Harrisburg, is president; Bill Lenker, Harrisburg, secretary and treasurer; and Al Cooper, trustee.

MONONGAHELA SPORTSMEN ACTIVE IN CONSERVATION

The Monongahela Sportsmen's Association organized October 18, 1933, with 24 members on the roster. Election of officers at that session resulted as follows: President, George Nuss; vice-president, David Frye; treasurer, Sturgis Jackson, and secretary, R. S. McMahon.

Steadily creeping up in membership the local association now has 112 members signed up, although quite a few of the sportsmen are not active in club work, their time being taken up by business.

Later the organization became affiliated with the Washington County Sportsmen's League and they further entered into the realm of sportsmanship in the state by becoming attached to the Pennsylvania Federation of Sportsmen's Clubs.

The county association furnishes buttons and suggests that hunters, trappers and fishermen proudly display them along with their state permit. The county officials state that the presence of the button not only shows that the wearer is a member of a county organization, but also that he is for all that makes for better sportsmanship afield and astream.

After the first year of organized work the club committeemen realized that interest in the club had grown to such a degree that their own private quarters were needed. Immediately following the October 6, 1934, meeting at which the present officers (David Frye, president; Joe Palma, vice-president; Sturgis Jackson, treasurer; Ray L Eicher, secretary) were elected, a committee was named to secure quarters for club activities. The Boyer Building, Railroad Street, answered the need very well and the boys moved in some time later.

Billiard tables, books, tables and chairs and other necessities were added to make a club room out of the former store-room, a rifle range built on the one side of the building further added to the interest of the sportsmen.

For the past year the sportsmen have been gathering there for regular and special meetings and for social affairs at which tall stories of hunting, fishing and trapping were predominant.

SEND IN YOUR 1935 REPORTS OF CATCHES

In order that the Board of Fish Commissioners may have a comprehensive check-up on the 1935 fishing season, special post cards were issued with all licenses. These cards are in the form of a questionnaire, prepared to give the Board information that should lead to better service to all fishermen.

What fishes do you prefer to catch? What method of fishing do you prefer, fly, plug or bait? Do you fish at night for bass, trout or other species of fish? Number of fish caught in 1935, bass, trout and other pecies. By answering the questions on this card, you will furnish your Board with much valuable data upon which it can base future programs.

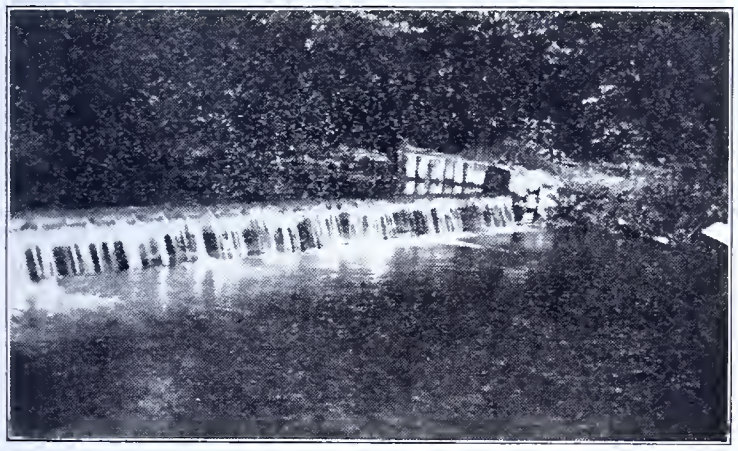
Don't delay. Please send it in.

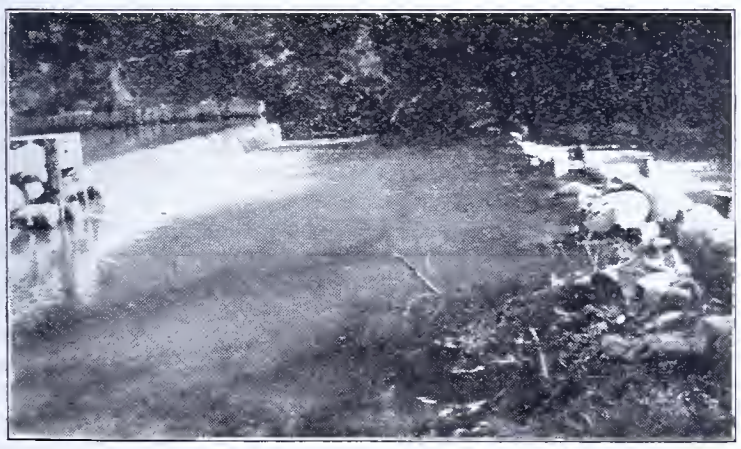
BASS FISHING GOOD ON WILMORE DAM

Fine bass fishing during the past season was enjoyed on Wilmore Dam in Cambria County according to Warden Link Lender of Bellwood. John Major, trustee of the Portage Sportsmen's Club, fishes in Wilmore dam from opening of the bass season to its close. He landed one 18-inch bass, and on November 19 scored with two 16-inch and one 15-inch bass. James Galarigo of Portage caught a bass measuring 19 inches, and George Hopper of Portage scored with one 19-inch bass and another 18 inches in length.

Using corn and doughball as bait, Bob Cowan and Harry Cowan, his son, of Portage, with Ernest Lenhart of Spring Hall caught over 30 carp in the Juniata River during September and October. The fish ranged in length from 15 to 29 inches.

Fishing in the Bridgeport Dam, Ed Spiker, of Bridgeport, caught one of the largest carp reported from southwestern Pennsylvania during 1935. The big fish weighed 23 pounds.





DEIBLER DAM, ONE OF FIVE DAMS BUILT ON BALD EAGLE CREEK BY TYRONE SPORTSMEN'S ASSOCIATION

TROUT POND AT TIONESTA HATCHERY, FOREST COUNTY

LOG COVERS AID IN STREAM IMPROVEMENT

July and August, the most effective time for improvement of trout streams, will, according to present indications, find hundreds of sportsmen in many sections of the state taking part in this work. This season of the year is a determining factor in the effectiveness of stream betterment. In the majority of instances, trout waters are at low level during midsummer, revealing sections most in need of improvement. From another angle, hot summer days are ideal for work in the cold water of a trout stream. The importance of concentrating this improvement program on major trout waters, that is, on waters that have been approved for stocking in the Fish Commission's stream survey, has been stressed. To improve a small stream that becomes dangerously low during drought periods is not advisable, as such streams maintain little or no aquatic life.

The following suggestions on stream improvement may prove timely. First, plan the work carefully. Go over the stream to be improved, checking on available material for construction of deflectors, dams, and covers—that is, logs, boulders, and fallen trees. Remember that deflectors, to be most effective, must be installed at a bend in the stream, along the right shore, if the stream bend is to the right, and the left shore, if the curve is to the left. Dams should be constructed only on streams of low temperature water that have a swift flow, in order not to warm the water to the detriment of trout in lower areas. Second, build with an idea of permanency. Haphazard construction often is of no avail in stream improvement, and frequently may be detrimental to trout in the stream. If logs are used in dams and deflectors, they should be securely based in the shore, firmly wired together with heavy galvanized wire, and staked. Boulder and rock construction should also be firmly based with large rocks for permanency.

When completed, an improvement project should have a number of log covers located at advantageous points on the stream. The necessity of increasing natural cover—brush, trees and other shelter on the shores, and aquatic vegetation in the stream itself—has been stressed in former articles. Built in conjunction with deflectors and dams, log covers serve a dual purpose of additional shelter for trout, and when properly constructed, provide additional pools through the digging action of the current beneath them. While some of Pennsylvania's trout streams are low banked, many streams in this state are high banked and are adaptable, in instances where swift currents and low temperature water prevail, to log and boulder dams.

Log covers should be constructed flush with or slightly below the summer water level of a stream. Of the various types, the cover known as the triangle cover appears most suitable for improvement work in Pennsylvania. This cover may be effectively used in conjunction with log wing or boulder wing deflectors, and when properly built serves to form a fine pool or refuge for trout beneath. If built in conjunction with a log or boulder deflector it should be placed a short distance downstream from the tip of the deflector, so that the increased current will serve to form a pool beneath. The triangle cover should be based on the shore opposite the deflector.

To be most effective, deflectors should quarter downstream.

Three heavy logs, wired firmly together in the form of a triangle, serve as a base for the surface logs, which are of smaller dimensions, and should not extend beyond the extremities of the base logs. These surface logs, wired to the base logs, should, when the cover is placed, run parallel to the current, butts facing upstream. The heavy base log on the upstream side should be angled slightly downward to give it the greatest possible digging power. Stakes driven into the stream bed should support the tip of the deflector slightly below the water level at the point farthest toward center of the stream. For greater strength the base logs should be lopped securely together. The strongest available stakes should be used. In placing the cover, one of the sides of the triangle should be based at the shoreline, and the base log face the downstream current. When installed in such a manner that the surface logs are slightly beneath the summer water level of the stream, this cover offers little opportunity for watersnakes, turtles, or other fish predators to use it for sunning purposes.

A cover that has been tried successfully at Spring Creek is the square cover, which is suitable for installation in midstream. Two heavy logs, one at each extremity of the cover, serve as a base for this structure. The smaller cover logs should be firmly wired and stapled to the base. When completed, this cover should be staked firmly at midstream, with the surface logs running parallel to the current. Owing to heavy water pressure, stakes used in placing the square cover must be of heavy, strong wood, driven into the stream bed about five feet. This cover is particularly adaptable for uniformly deep streams.

Current deflectors of the boulder type have also been installed at the Fish Commission's stream improvement and trout nursery project on Spring Creek. A plan for rotating the current from these deflectors was accomplished through installation of the deflectors at a point farthest upstream on the left shore, and placing another deflector about one hundred feet downstream on the right shore.

Catches Mullet on Stone Cat

One of the strangest catches reported last year was that made on Marsh Creek, Centre County, on the first day of the bass season by Squire William Shay of Port Matilda.

Believe it or not, Squire Shay, who was using a stone catfish for bait, hooked and landed a mullet measuring 13½ inches in length.

It is a well-known angling fact that smallmouth bass hit a stone cattie with plenty of vim, but when a sluggish bottom feeder such as the mullet reverts from form in such notable manner, that's fishing news.

Probably the cattie pulled some catfish trick that brought the hook into position to impale the mullet, for the latter was hooked in the month, according to angler Shay.

I.W.L.A. CHAPTER PLANTS FISH

Ray Kensey of the York County Chapter of the Izaak Walton League reports that the chapter recently planted 25,000 fish raised at its hatchery pond near Dallastown. Catfish and bluegill sunfish were stocked in public streams of York County, namely, Codorus Creek, Kreutz, Bermudian, and the Big and Little Conewago Creeks.

Bat Hits Fly

A bat that mistook an artificial fly for the real insect just about wrecked the fly fishing equipment of Jack Beeber, noted fly fisherman of West Chester, last spring on White Clay Creek.

Jack was fishing dry fly for the brownies of White Clay, when on the back cast the bat struck the fly. As Beeber was right in the act of putting steam behind the forward cast, the creature put his light fly rod to a real test before it was "grounded."

QUARRY HOLE BASS

While plug fishing in Potts Quarry Hole, Chester County, Lewis Proudfoot caught two fine bass that would do credit to any body of water. One, a largemouth, measured 22 inches in length and weighed 4¾ pounds. The other, a smallmouth, measured 17½ inches in length.

BULLHEADS AND PICKEREL

J. D. Kizer, of Maplewood, reports a fine catch of bullhead catfish and pickerel from Kizer's Lake by Charles August, of Scranton. August landed 20 bullheads, one weighing 2½ pounds, and a number of pickerel, the largest measuring 23 inches in length.

Fisherman—"I tell you it was that long. I never saw such a fish!"

Friend—"I believe you."

ELVERS OR BABY EELS CAUGHT ASCENDING THE DELAWARE RIVER

DOBSON FLY SKETCHES BY CHAS. M. WETZEL. LEFT, ADULT FEMALE; CENTER, HELGRAMITE; RIGHT, ADULT MALE

Lands Big Bass on 4-Oz. Rod

When it comes to taking big bass on extremely light tackle, hand the laurels to Charles Withinton of Newton Hamilton. Recently while fishing in the Juniata, according to Special Warden Bill Keebaugh, Withinton hooked and landed a largemouth bass 21 inches in length and weighing 4 pounds, 14 ounces. He was using a 4-ounce fly rod and artificial lure (kind not given) when he made the catch.

How that slender wand of a rod must have arched as the big bass fought its bulldog battle for freedom.

CARP FISHING NEWS

From Warden Myron Shoemaker, of Laceyville, comes word of catches of big carp in Luzerne County. Included in the group of expert carp fishermen is Adam Kachinski of Pittston. Using about 300 feet of heavy line, Kachinski carries the bait out into the middle of the North Branch and drops it. Then he rows back to shore in the boat and awaits developments. That this unique system brings results is made evident by some of his catches. When Shoemaker met him, he had one 39-inch carp and had just sent four back to Pittston that had a combined weight of 60 pounds. The bait used is a compound of corn meal, flour, starch and vanilla, wadded on the hook as doughballs. During one week in September he caught 16 carp, the largest weighing 31 pounds. Between 45 and 50 of the big fellows were landed this season.

A companion of Kachinski, Stanley Grotis, Jr., of Pittston, has caught 60 carp this season, the largest tipping the scales at 36 pounds. His father, Stanley Grotis, has also a season score of 60, and is reported to have topped all weights of carp taken in Pennsylvania waters on hook and line with a fish weighing 64 pounds.

These carp fishermen claim that a 30-pounder will give them a battle lasting two hours.

BIG WATERSNAKE KILLED

One of the largest watersnakes to be reported killed this year was shot during September by Ira E. Mellinger, president of the Lancaster County Fish and Game Protective Association. The big reptile measured 49½ inches in length.

Mellinger scored the kill while investigating beaver activities along the Black Rock Creek, about four miles below Quarryville in Lancaster County. Attracted by the splashing of a frog that the watersnake had captured, he shot the reptile and the frog escaped, apparently uninjured in the episode.

Lancaster sportsmen have been taking an active part in the drive against the watersnake sponsored by the Fish Commission this year, and hundreds of these reptiles are said to have been killed.

MONTGOMERY SPORTSMEN JOIN FEDERATION

With nearly a dozen organizations—representing an estimated membership of more than 1,000 members—indicating a willingness to pool their collective interest for the propagation and conservation of fish, game and forests, the Federation of Sportsmen's Clubs of Montgomery county was formed recently at a three-hour meeting at Memorial Park, Schwenkville.

Chairman of the newly organized sport organization is Howard C. Shallcross, Gratterford, president of the Perkiomen Fish and Game Association of Schwenkville.

Two vice chairmen were also named. They are Lloyd Reeves, Huntingdon Valley, and Irwin Clemens, Royersford.

J. Warren Ziegler, Norristown, secretary of the Montgomery County Fish, Game and Forestry Association, was chosen to the same post in the federation's unit.

Clarence S. Gerhart, Red Hill, was named treasurer.

Objectives of Federation

The objectives of the Federation include:

1. To endeavor to secure the enactment of legislation for the propagation and conservation of fish, game and forests.
2. Encourage the elimination of pollution of our water courses.
3. To encourage more friendly relations between sportsmen and land owners.
4. To uphold the fish, game and forestry laws of our state and to assist in their enforcement.
5. To develop better sportsmanship and more interest in outdoor life.
6. To assist in giving more publicity to these causes through the press.

BIG BROWNIE

Of big brownies reported just before close of the season on July 31, that taken by Lewis Grove of Duncansville, Blair county, apparently heads the list. The trout, a 25½ inch fish weighing 6½ pounds was taken near the Keagy dam. It is reported to have been caught on a barbless fly.

A little vinegar in water boiled in your pots or pans will take away the smell of fish.

JUNIOR WALTONIANS ENGAGE IN CONTEST

W. F. Goddard, secretary of the Berks County Chapter, Izaak Walton League of America, announced an interesting contest based on conservation for the Junior Division of the Berks County chapter. Following are regulations and prizes in the contest:

	Points
Hiking .....per mile	10
Building a Model Winter Feeding Station for Birds	400
Building a Model Crow Trap	400
Essay on some Fish Native to Pennsylvania	500
Essay on some Game Bird or Animal	500
Essay on Enemies to Valued Game or Fish Life	800
Three Longest Suckers caught:	
Longest	150
Second	100
Third	75
Photograph of Outdoor Life	250
Building a Bird House	400
Crows killed (2 feet as evidence) per crow	200
Drawing or sketch of wild life	400
Attendance at Meetings, per meeting	100
Perfect attendance March and April Meetings extra	500
Essay on "The Danger of Shooting a 22"	1000
Essay on "The Care of Firearms" ..	400
Essay on "What is a Good Sportsman?"	500
A list of the principal Fish Laws written out	300
A list of the principal Game Laws written out	300

Rules and Regulations

For Hiking points you must report approximate number of miles and from what point to what point. Report must be in writing and signed with the date.

All essays must be at least 500 words in length.

Suckers must be brought to the Y.M.C.A. and measured by Mr. Bricker in the Boy's Department.

Photographs must be taken by yourself between the dates of the contest. They must be signed on the back and the time and place noted.

Crows feet must be given to Mr. Hoffmaster at the regular meetings.

Total number of points shown will be credited to each boy who does the event listed.

Prizes

One free week-end trip for three (3) boys to a Deer Hunting Camp in the Allegheny Mountains to be taken sometime in May, 1935.

Good Bamboo Fishing Rod.
Fishing Basket.
Model Airplane Kit.
Steel Fishing Rod.
Four or five other prizes.

A LOYALSOCK PIKE

The famous Loyalsock Creek in Lycoming County, in addition to furnishing some excellent fishing for brown trout last year, has been holding its own as a bass and wall-eyed pike producer. Special Warden Carl Bidelspacher, of Williamsport, reports the taking of a 27½-inch pike from the Loyalsock by Eugene Lundy of Montoursville.

HATCHERY JAR IN OPERATION

Lundy made the catch on a spinner while fishing in a pool near the Slabtown bridge. It weighed 6 pounds, 5½ ounces. Another fish, believed to be even heavier, broke his line.

If you fall in the water, no matter how chilly the weather, take off all your clothing, wring it out as dry as possible and put it on again. You will be warmer afterwards and avoid colds or worse.

BOARD OF FISH COMMISSIONERS
HARRISBURG, PA.

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HERE AND THERE IN ANGLERDOM

Here's a recipe for good carp bait submitted by Arch Anthony of West Pittston. One half cup warm water, 3 tablespoons corn meal, 4 tablespoons sugar, one teaspoon corn starch. Soak corn meal 10 minutes in warm water. Mix other ingredients. Stiffen to thin pancake batter with wheat flour. Flavor with two teaspoons of vanilla extract. Bake on medium hot griddle as a pancake. Cut in pieces one-half inch square or larger, and use as carp bait. Arch caught 437 carp with this bait from October 16 to December 23, 1934.

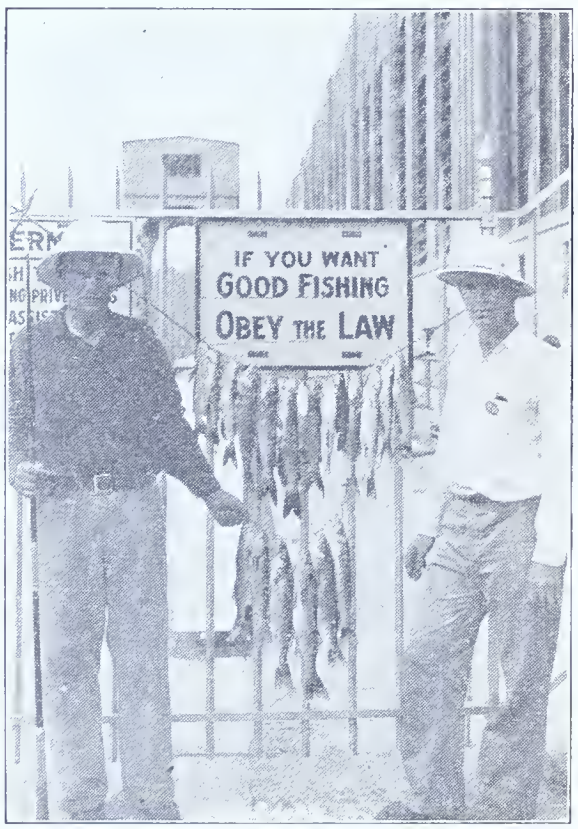
Charles Owen, R. D. No. 1, Athens, is the only remaining survivor of the Civil War on the North Tier, writes H. M. Wallin of Athens. Mr. Owen, who is 91 years old, took out a fishing license again last year. He's keen for fishing.

Some nice brown trout were taken in Huntingdon County streams last season, writes Howard Shilling, of the Huntingdon County Game, Fish and Forestry Association. Fred Steele scored with a 15½-inch brownie and Howard landed one measuring 17¾ inches in Standing Stone Creek; Spruce Creek yielded an 18-inch brown to J. B. Kunz that weighed 2 pounds 7 ounces. Mart Kirkpatrick, association member from Petersburg, took 10 brookies from 8 to 12 inches in length from Shaver's Creek in a day's fishing.

Fishing at the juncture of Lost Creek and the Juniata River last spring, John Zeiders of Mifflintown made one of the best sucker catches of the year. Fifteen fish were caught, ranging in size from 15 to 18 inches. The largest sucker weighed better than three pounds, according to Warden Charlie Long.

Glass Creek in Sullivan County, producer of the record brook trout of the year, also yielded some other mighty fine brookies. Jack Cox of Dushore, writes Warden Myron Shoemaker of Laceyville, caught 15 brookies in a day's fishing on this stream, the smallest in the catch measuring 8 inches and the largest 15½ inches. The North Branch of Mehoopany Creek furnished good fishing. Relying on flies, Leo Marcey of Dushore caught 30 trout in two days' fishing.

Fred Martin, of Plymouth, informs us that catching prize fish is no novelty for Costic Borasavage, of Plymouth, who caught the record pickerel taken in Pennsylvania waters during 1935. In 1933, Costic won a fine fly rod in the fishing contest conducted by Shawnee Camp 240, United Sportsmen of Pennsylvania. The fish which won the prize was a 28-inch brown trout taken in Lake Wallenpaupack. The big lake apparently has a yen for Costic, because his record pickerel this year was taken in that body of water.



CHANNEL CATFISH AND THREE WALL-EYED PIKE CAUGHT AT SAFE HARBOR DAM BY ED KNEISLEY AT LEFT

Monocacy Creek yielded a fine brown trout to William Pike of Bethlehem last season. It measured 19½ inches in length.

"I just want to give you the highlights of our organization," writes Harold Russell, secretary of the Dunning's Cove Sportsmen's Association in Bedford County. "We have purchased a vacated two-room schoolhouse which we are remodeling for our clubhouse. Have received from the Fish Commission several shipments of fish which are doing fine and within a couple of years we should have some wonderful fishing. We have a ruling in our club that all boys under 14 that kill ten watersnakes will be given a membership card. During the summer several boys reached the goal and apparently this is proving a worthwhile method in combating the snake menace."

Congratulations, Harold, on a novel scheme for fishing betterment.

One of the strangest freaks to come to the attention of the ANGLER is the albino bullfrog owned by Chet Steigerwalt of Harrisburg. Already in its third year, this pink-eyed cream-colored frog is a perfect specimen. Of 100 albino tadpoles, 20 shot legs in Chet's collection. Cannibalism finally thinned down the number to the one now in his possession. The tadpoles came originally from the pond owned by George Brightbill at New Market, York County.

Rev. C. W. Maclay, Fannettsburg, Franklin County, who is an ardent fisherman, recalls an old saying concerning pickerel. Here it is: "Pike (pickerel) are never found in waters flowing southward." Rev. Maclay said that his experience in fishing would indicate the truth of the saying.

Five bass taken in the same water by Curt Gilland and Bill Krepp of Franklin had a total weight of 15 pounds. They were caught on small frogs.

Mrs. Sallie English, 63 years old, of Oil City is enthusiastic about fishing. Fishing at Oleopolis eddy on the Allegheny one day last fall she caught two bass, one a largemouth weighing three pounds and measuring 18 inches, and the other a 14-inch smallmouth.

Those fighting largemouth bass of Oneida Dam in Butler County, furnished plenty of thrills for anglers in that section of the State last season, according to Warden J. H. Bergman of Butler. Tony Wilkinsburg, of Wilkinsburg, had a catch of four one day in July, the largest 20 inches and weighing 4 pounds, 12 ounces, two 16-inchers and one 14. Dick Brittenbach, 11, of Millvale, R. D., caught a largemouth on a plug at the dam that measured 14 inches.

A fine wall-eye measuring 24 inches in length was taken in the deep water of Tuscarora Creek during October by W. T. Isenberg, veteran angler of Bellwood. His son on the same trip scored with a nice bass.

S. L. Horst, secretary of the Perkiomen Valley Sportsmen's Association, informs the ANGLER that the Association this year offered a prize to adult members and junior members turning in the largest number of watersnake tails. Writing in October, he reported a total kill of 442 snakes. William Weirman was high in the adult division with 181 and Tyrus Jordan runner-up with 133. Roy Landis, junior member, killed 65.

A FREAK OF NATURE. THIS IS THE ALBINO BULLFROG OWNED BY CHET STEIGERWALT OF HARRISBURG

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PENNSYLVANIA ANGLER 1936 FISHERMAN'S CALENDAR

SUCKER FISHING

1936 JANUARY 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FIRST QUAR 1 - 30 th	FULL MOON 8 th	LAST QUAR 16 th	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	NEW MOON 24 th

1936 FEBRUARY 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FULL MOON 7 th	LAST QUAR 15 th	NEW MOON 22 nd	FIRST QUAR 29 th			1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

1936 MARCH 1936

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	FULL MOON 8 th	LAST QUAR 16 th	NEW MOON 22 nd	FIRST QUAR 29 th

TROUTING TIME

1936 APRIL 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FULL MOON 6 th	LAST QUAR 14 th	NEW MOON 21 st	1	2	3	4
5	6	7	TROUT OPENS	9	10	11
12	13	14		16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		FIRST QUAR 28 th

1936 MAY 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FULL MOON 6 th	LAST QUAR 14 th	NEW MOON 20 th	FIRST QUAR 27 th		1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

1936 JUNE 1936

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	FULL MOON 5 th	LAST QUAR 12 th	NEW MOON 19 th	FIRST QUAR 26 th

BASS FISHING

1936 JULY 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FULL MOON 4 th	LAST QUAR 11 th	NEW MOON 18 th	BASS OPENS	2	3	4
5	6	7		9	10	11
12	13	14	15	16	17	18
19	20	21	22	23		25
26	27	28	29	30	TROUT CLOSES	FIRST QUAR 26 th

1936 AUGUST 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FULL MOON 2 nd	LAST QUAR 9 th	NEW MOON 16 th	FIRST QUAR 25 th			1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

1936 SEPTEMBER 1936

SUN	MON	TUE	WED	THU	FRI	SAT
FULL MOON 1 - 30 th	LAST QUAR 7 th	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30		NEW MOON 15 th	FIRST QUAR 23 rd

BEST FOR BASS

REVERY

1936 OCTOBER 1936

SUN	MON	TUE	WED	THU	FRI	SAT
LAST QUAR 7 th	NEW MOON 15 th	FIRST QUAR 23 rd	FULL MOON 30 th	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

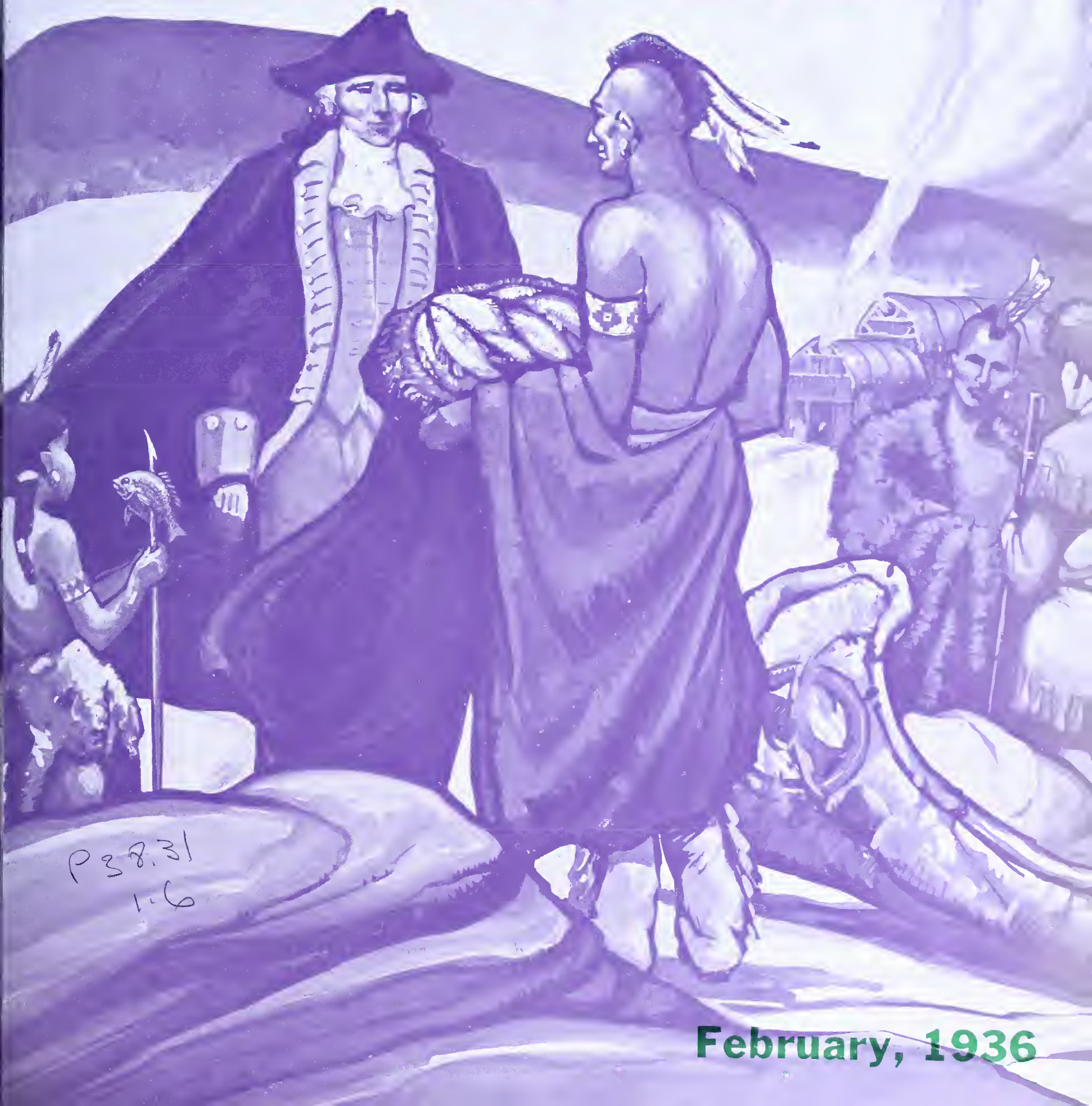
1936 NOVEMBER 1936

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22		24	25	26	27	28
29	BASS CLOSES		LAST QUAR 5 th	NEW MOON 13 th	FIRST QUAR 21 st	FULL MOON 29 th

1936 DECEMBER 1936

SUN	MON	TUE	WED	THU	FRI	SAT
LAST QUAR 5 th	NEW MOON 13 th	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	FIRST QUAR 21 st	FULL MOON 27 th

PENNSYLVANIA ANGLER



February, 1936

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ALEX P. SWEIGART, *Editor*
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NOTE

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PENNSYLVANIA ANGLER welcomes contributions and photos of catches from its readers. Proper credit will be given to contributors.

All contributions returned if accompanied by first class postage.

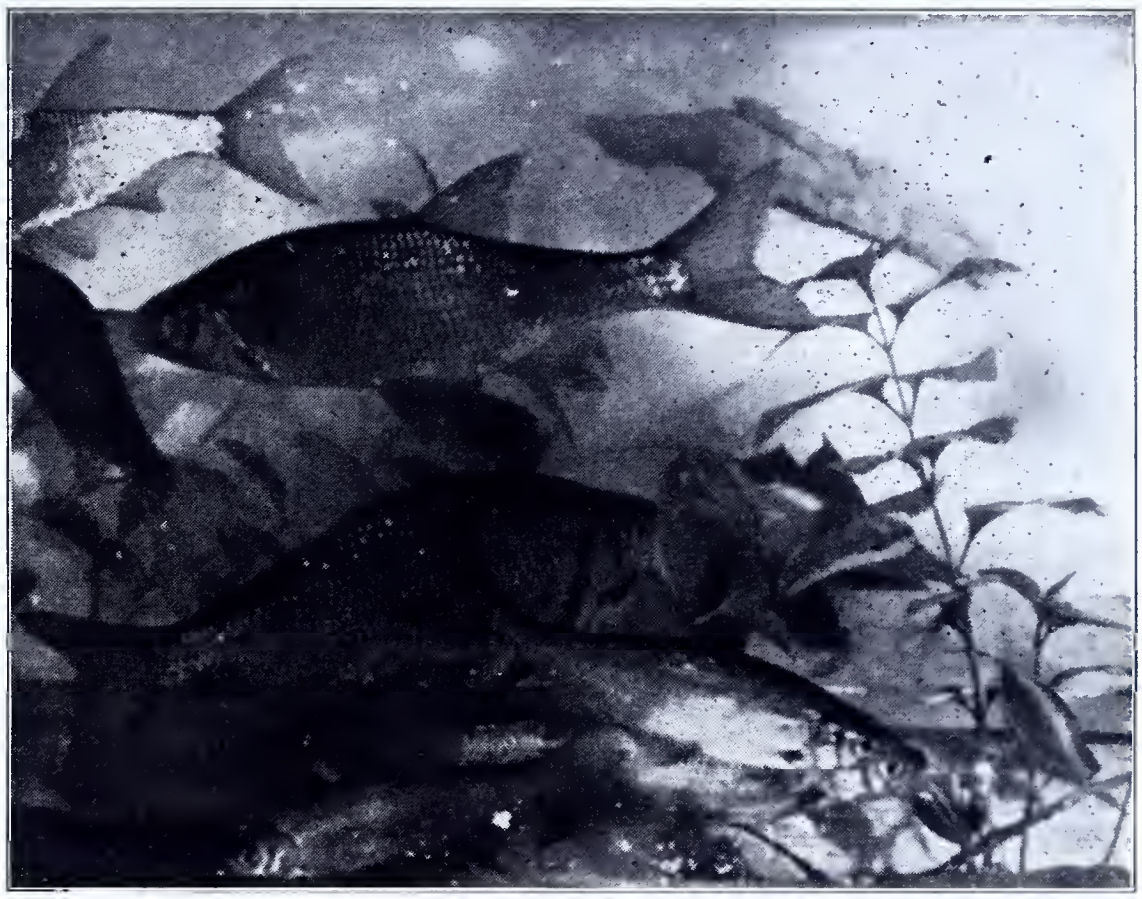
IMPORTANT—The Editor should be notified immediately of change in subscriber's address. Please give both old and new addresses

PENNSYLVANIA ANGLER

Vol. 5 No. 2 February, 1936

EDITORIAL

More Forage Fish— More Game Fish



GOLDEN SHINERS—GOOD FORAGE FISH

The constantly growing number of bass fishermen who turned to fishing artificial lures for smallmouth bass, largemouth bass, pickerel, wall-eyed pike and other warm water species of game fish last year is conclusive evidence that Pennsylvania's campaign to conserve the supply of natural forage in our waters is bearing fruit. Every convert to artificial bait fishing means that much saving in this vital supply of game fish food.

Facing the facts, however, the majority of our anglers still rely on live bait in bass fishing. Many of these fishermen are true conservationists in every sense of the word. They do not crowd bait fish, shiners, chubs or stone catfish, in a pail and take a chance on losing the lot through suffocation. As good fishermen, they know that the more lively a bait is, the more enticing it will be for a game fish. They know that a dozen carefully conserved bait fish will prove more effective as sport-producers during a day's fishing than four dozen so weakened from lack of oxygen that when placed on the hook they will roll listlessly on their sides at the bottom of the stream. Any live-bait fisherman is aware of the fact that game fish such as the bass, big fellows, are highly selective and strike more readily at a natural-acting minnow or stone catfish. On a forty-mile trip to a fishing stream, the average minnow bucket should care for twelve or fifteen bait-fish nicely. The experience of arriving at the fishing destination and finding bait dead or nearly dead is all too common, as most anglers will agree.

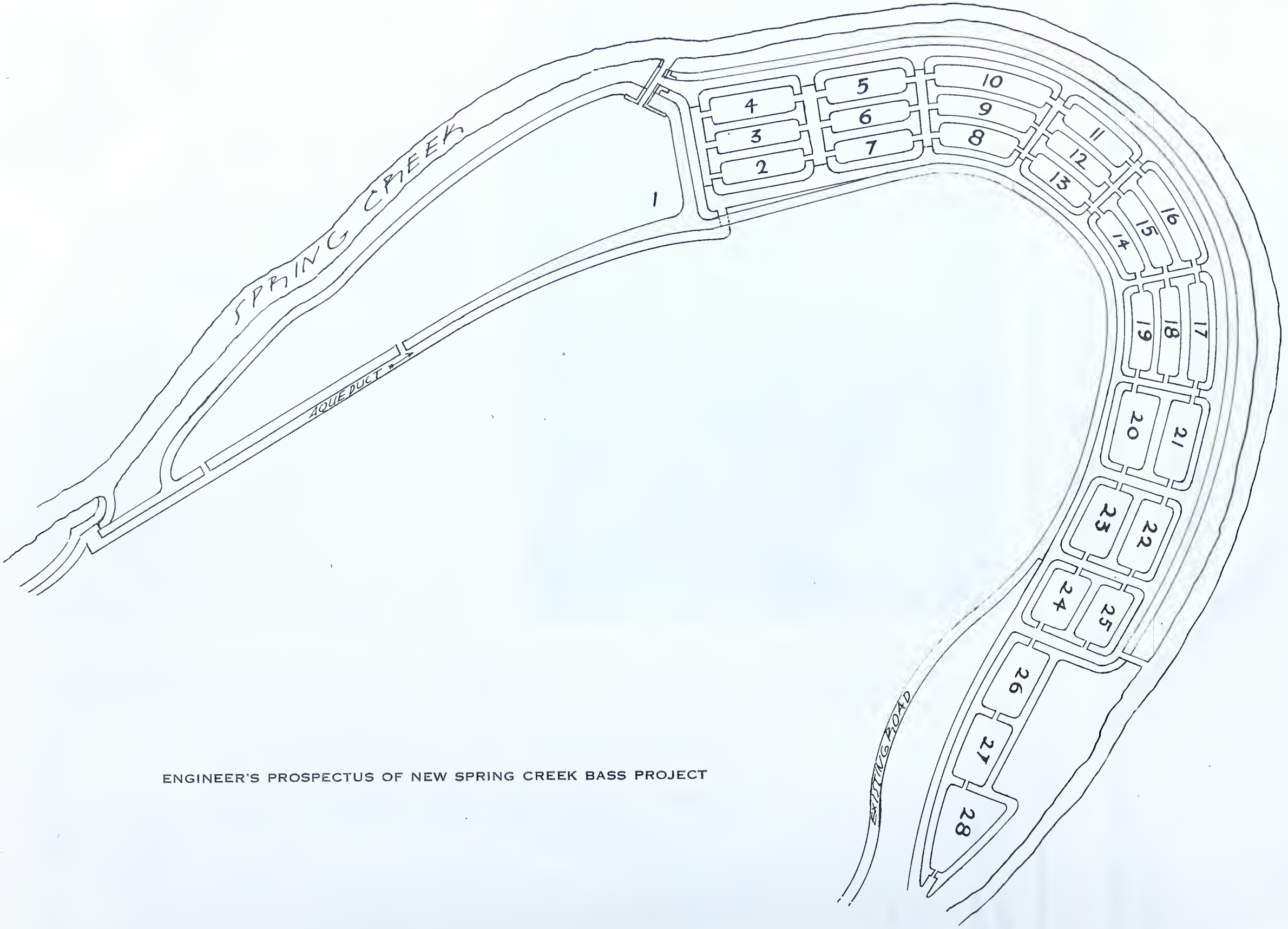
In stressing this angle of live bait fishing, I have but one thought in mind—the necessity of practising conservation methods by our fishermen. At the present time, in many of our fishing streams, particularly bass streams, there is a splendid stock of game fish. A constantly growing army of fishermen have tended to reduce the number of voracious species of fish to an extent that assures, with average care of the food supply, good fishing in future years. There is reason for this belief if we consider the bass cycle. Almost without interruption, these splendid game fish have increased in number during the past six or seven years. During the late '90's, when probably one angler was on our streams to twenty today, bass increased to such an extent that their supply of natural forage was diminished and they in turn decreased in number. The annual bass take under present fishing conditions has served as a check to this tendency.

Perhaps there is no more vital feature in the Board's stocking program than that of planting, in addition to game and pan fishes, minnows to serve as food for the carnivorous species. I am convinced that this system of balanced stocking must work to the benefit of our fish conservation program as a whole.

In the saving of forage fish, our 1935 program dovetailed nicely with stocking. Thousands of watersnakes, particularly destructive to minnows, stone catfish and other live bait, were killed. Natural predators, regarded by some naturalists as essential in preserving the "balance of nature" are fast slipping in this role from the modern fishing picture. Man today is, and should be, the control agent for the preservation of proper balance in fishing waters. And so long as the average fisherman is conservation-minded, kills no more than he needs, uses no more live bait than necessary, our chief problem in providing good fishing for the future will have been solved.

O. M. Dribler

Commissioner of Fisheries



ENGINEER'S PROSPECTUS OF NEW SPRING CREEK BASS PROJECT

The Bass Production Program for 1936

SMALLMOUTH bass have been subjected by the Fish Commission to a more intensive study during the past ten years than have any other species of fish retained at the hatcheries. The bass cultural program has resulted in three marked advances to successful propagation of these popular game fish. First was development of facilities for production of the daphnia, or water flea, essential as food for the baby fish. The second factor was production and maintenance of the Board's own smallmouth bass as brood stock. This insured a dependable supply of bass for brood purposes and reduced the constant possibility of introduction of disease, such as tapeworm, by wild fish brought in for brood purposes. Our brood stock now at the hatcheries is apparently free of disease. Equally important is the third development, teaching the baby bass to feed on artificial food readily available at the hatcheries. This three-fold advance in bass culture during the past ten years will serve as a basis for the contemplated bass production program in 1936.

Ranking as perhaps the most voracious fish in the inland waters, black bass, from the time of absorption of the yolk sac, require an immense quantity of food. Without doubt, growth of the daphnia to serve as forage for the young bass has been the keystone upon which Pennsylvania has forged to the front in this phase of fish culture. At the Pleasant Mount hatchery in Wayne County, where much of the experimental work with bass was carried on, 110 ponds for the production of these tiny organisms were constructed. At the peak of the daphnia feeding program, over three bushels of the organisms were fed to the young bass in a single day. The daphnia and other minute aquatic organisms comprise the first food taken through the mouth not only by bass but by many other species of fish while in the early stages of growth.

From the angle of hatchery-raised brood stock, the importance of this feature in the bass production program cannot be overemphasized. Although in a wild state, fish carry or have in the body disease germs, because of their wider range and natural vitality this factor frequently is of slight danger. Confine these same fish, however, in a crowded hatchery pond, change their diet, and there is an ever-present danger of disease epidemic that may bring about loss of not only the introduced fish but the hatchery fish as well. The effects of water temperature on bass confined at the hatcheries is interesting. It has been found, for instance, that the warmer water is, up to a certain temperature limit, the more rapid will be the growth of baby bass with less attendant danger of high mortality from an almost microscopic disease germ. It is believed that this germ thrives in water above 78 degrees Fahrenheit.

The third factor in development of bass raising in Pennsylvania has been the education of young bass to feed on artificial food. Heretofore, when wild bass were introduced at the hatcheries for brood purposes, it was difficult to teach them to take anything but live forage to which they had been accustomed. At times it was almost impossible to secure sufficient minnows, crayfish and tadpoles to meet the requirements of the adult bass. As an adequate food supply is vital for the nourishment of the brood fish, this proved a real handicap. In Pennsylvania waters, bass enter a period of dormancy usually in late November, emerging when water temperature rises in the spring of the year. It is essential that the adult fish have sufficient surplus flesh and fat upon which to draw during the winter months if the next year's spawning is to be successful. Unless the brood fish are in prime physical condition when they enter the hibernation period, their body activities will be kept up during this period at the expense of the next season's egg crop. Through development of a strain of bass that will thrive on artificial food at our hatcheries, this phase of the problem has been apparently overcome.

In considering bass culture, it should be emphasized that there are still many limiting factors to be surmounted before the raising of these game fish will be on a par with trout culture. Trout culture is no longer experimental. Rather, it is a safe assertion that at present it is conducted just as satisfactorily as poultry raising. However, from knowledge being constantly acquired in bass propagation and the forward strides being made in this work, the fish culturist is encouraged and feels that the time is not far distant when bass will be produced and stocked in worthwhile numbers.

Year by year, the demand for stocking of bass waters throughout the state has increased. Occasionally, the Board is unjustly criticized by uninformed persons for not making greater attempts to stock these game fish. Until very recently, owing to limited knowledge in this phase of fish culture and difficulties encountered at the bass raising stations not only in Pennsylvania but throughout the United States, those in charge at our hatcheries did not feel justified in spending the sportsmen's money for construction of bass hatcheries that might prove failures. Briefly, background for such work was believed lacking. The Board now feels that sufficient knowledge of bass has been acquired to warrant increased expenditures on this species.

The Fish Commission this year intends to inaugurate one of the greatest bass propagation programs in its history. Here are the facts concerning this plan for greater bass production.

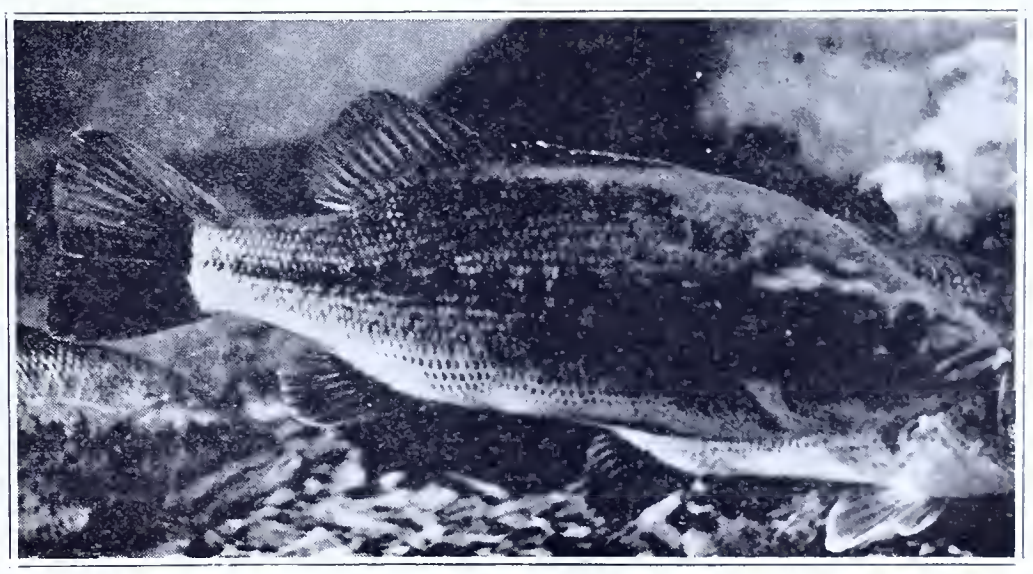
Union City

The entire Union City Hatchery in Erie County will be devoted to bass culture. Until 1917, a portion of this hatchery was devoted to raising bass. Results obtained were so disappointing, however, that the plan was abandoned. Originally, Union City was built as a bass hatchery. Constant study in recent years and different cultural methods have overcome to such an extent the limiting factors first existing at this hatchery, that we are anticipating sufficient bass production at Union City to increase materially stocking of northwestern Pennsylvania bass waters.

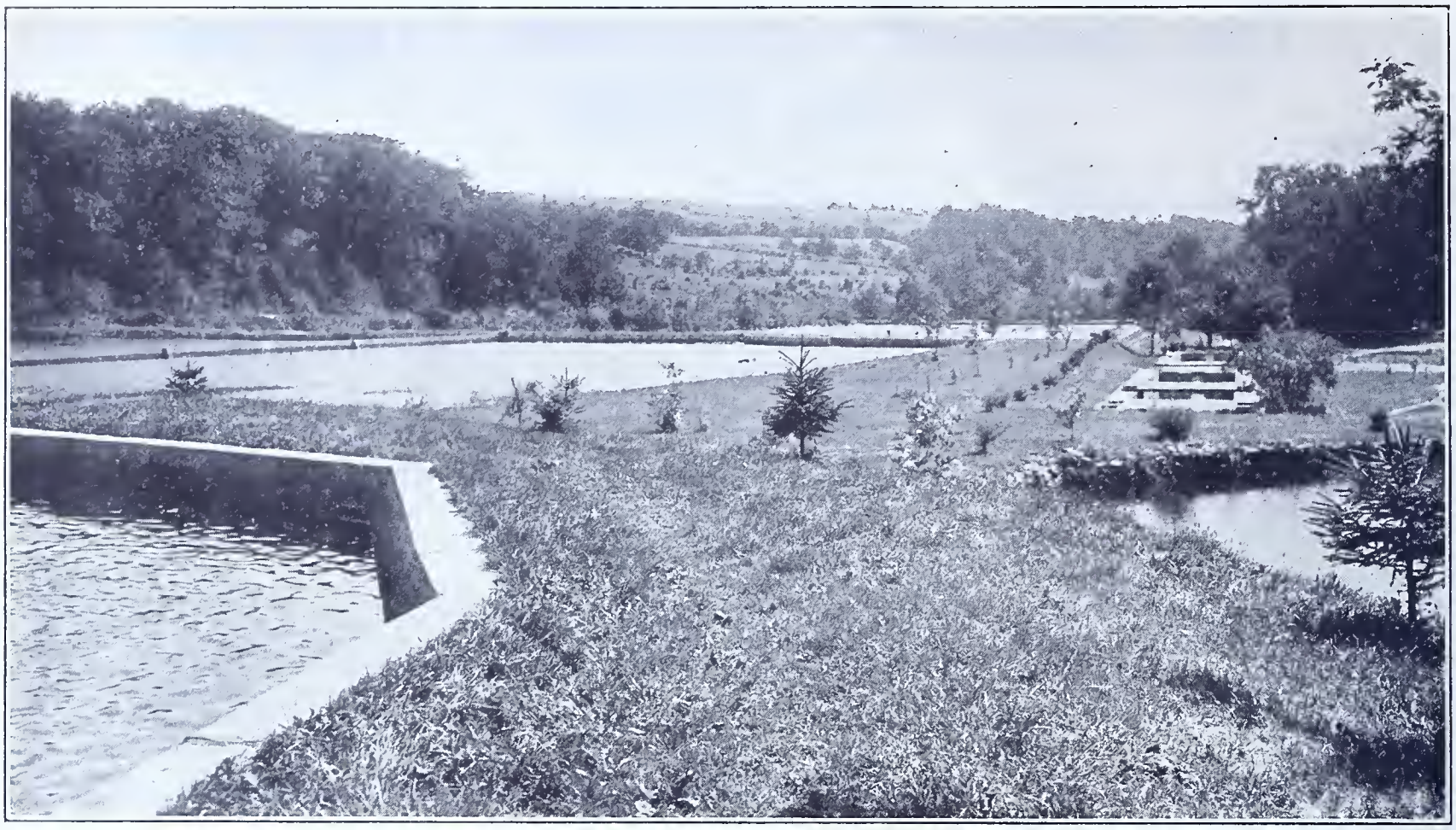
In addition to Union City, the Corry hatchery, under the same management, has been successfully conducting bass experimental work. Several large ponds will be available at Corry for bass propagation. The two hatcheries are only a short distance apart, and the large ponds at Corry will be used as brood ponds, thereby making available at Union City more pond space for raising small bass to stocking size.

The Spring Creek Project

For three years, bass experimental work has been conducted at the Spring Creek project near Bellefonte, Centre County. Last year, because the project was still under construction, only six ponds were available for bass. These ponds produced beyond all expectation. Sixteen ponds will be available at Spring Creek this year for bass, and three additional ponds are now being constructed. Plans are also complete



LARGEMOUTH BASS



BASS BROOD PONDS AT PLEASANT MOUNT

for construction of a bass unit located on Spring Creek above the present site. Reproduction of the blueprint of this unit accompanies this article. When completed, the new unit will more than equal the present Spring Creek project in water area. This project will not be entirely completed for the 1936 bass crop, but construction of the plant has been arranged so that as each pond is built it can be used for bass culture and not interfere with construction of additional ponds. By this arrangement, the Spring Creek bass project can be put on a part-production basis, at least, this year.

The Reynoldsdale Hatchery

The Reynoldsdale hatchery in Bedford County, insofar as trout production is concerned, has reached its capacity. Land and water, however, is available for a series of bass ponds at this plant, and this unit is now under construction. Before bass spawning time, we will have completed 16 nursery ponds and two brood ponds at Reynoldsdale.

Huntsdale

Noted for the high coloration and rapid growth in length and girth of its trout, Huntsdale hatchery in Cumberland County, one of the Board's most recent projects, has been an important factor in the trout production program. In the development of trout ponds at Huntsdale, considerable waste area, not suitable for building trout raising ponds, was created. This area is now being developed for bass raising. Huntsdale is located in proximity to some of the outstanding bass waters of the state, Conodoguinet Creek, Sherman Creek, Conewago Creek, Susquehanna River and the Juniata River, and should prove highly beneficial to these streams through increased stocking facilities.

Torresdale Hatchery

The Torresdale Hatchery near Philadelphia is a warm water plant, one half of which will be devoted to bass culture. It also is in the heart of some good bass fishing territory including picturesque Perkiomen Creek in Montgomery County.

Pleasant Mount

Pleasant Mount Hatchery has been Pennsylvania's major bass production plant. During the past 15 years, many experiments in bass culture were carried on at this Wayne County hatchery with varying degrees of success, and, of course, for three years, similar experimental work was conducted at Spring Creek. The two hatcheries rely on different types of water. That at Spring Creek is of limestone origin while at Pleasant Mount it is freestone. The Board intends to continue bass propagation at Pleasant Mount, where a large number of brood ponds are available. More bass fry can be produced at this plant than can be raised to adult size. As some of the more recent projects lack brood pond space, it is the intent of the Board to transfer some of the bass fry from Pleasant Mount to the other bass production units throughout the state, where the young bass can be raised to stocking size.

This increase in our bass hatching program has not been inaugurated on the spur of the moment. Commissioner of Fisheries O. M. Deibler, from the time he assumed office, has anticipated increased bass production. As a result, the smallmouth bass brood stock at Pleasant Mount has been increased from year to year, and there is now a surplus available to supply brood fish for the various hatcheries.

The bass propagation program calls for production of both smallmouth and largemouth bass. Certain waters in the state, notably artificial lakes such as Lake Gordon, Bedford County, and Lake Wallenpaupack, Wayne County, as well as the power dams on the lower Susquehanna River are apparently more suitable areas for stocking with the largemouth species. The survey and investigation of bass fishing waters during the past five years have brought to light many interesting facts relative to our bass waters, particularly that in some waters stocked with smallmouth as well as largemouth bass, the latter species predominates. In lakes and streams of this type, stocking will be limited to the largemouth variety.

THE FRONT COVER

George Gray, eminent artist and mural painter, has depicted a scene from the life of a great American, George Washington, whose birthday is observed this month, for our February front cover.

SUCKER CATCH

January and February are listed as first-rate fishing months by winter sucker fishermen, but unusually cold weather and heavy snowfall this year has retarded this type of the angling sport, if reports coming to this magazine mean anything.

That's why the catch scored by Mervin Devore of Hyndman is notable. Fishing in Koon Lake, Bedford County, on January 15, Mervin caught nine suckers, according to Warden Link Lender. The fish ranged in length from 12 to 16 inches.

THIS GAMEY BROWN TROUT PROVIDED J. HANSELL FRENCH, SECRETARY OF AGRICULTURE, WITH SOME EXCITING MOMENTS ONE DAY LAST SEASON

Bass-Eating Pike

Taken at face evidence, the catching of a five-pound wall-eyed pike on the North Branch last month by August Wyrgala of Laceyville would indicate that the voracious wall-eyes may be ranked as first-class bass predators.

Wyrgala, according to Warden Myron Shoemaker, had hooked an eight-inch smallmouth bass, and was bringing it into the boat when the pike hit it. It struck with relish, too, almost immediately swallowing the bass.

After Wyrgala had lifted the pike into the boat he opened it and found that in addition to the eight-inch smallmouth, its stomach contained three other young bass from four to five inches in length.

SETH SAYS

The big crick is froze tighter 'n' a drum, so our sucker fishin' ain't started right yet. In one or two o' them mild spells we had, a bunch o' the boys hed fair good luck in winter sucker fishin'. Caught some right big suckers, too, some o' them measuring 16 inches. Well, sir, I had some time a week back. There was a trackin' snow, so I traipsed over along the trout run ter see jest what was happenin' thet the snow could tell me. First off, I run inter the tracks o' a gol-wallopin' big mink. Thet mink hes been follerin' this run fer nigh onto five years, as I recollect.

I trailed him fer mebbe four miles inter the gap, an' he was still a-goin'. Reckon he's still trailin' the same route, up ter the head o' Trout Run, then onto the head o' Rattlesnake an' back in a big circle. The run's not froze too tight, fact it's fast water an' cold so it don't freeze without humdingin' cold weather. Found where he hed dragged out a fish, an' from what I saw in the snow reckon it was a middlin' size trout. Don't figger he'd a caught it, neither, ef the water'd been higher. These mink is nigh as slick as a watersnake in cornerin' a trout under a shelvin' rock an' then it's jest too bad for the fish. There ain't enuf o' them ter make them as bad on our trout as these cussed watersnakes.

Jerry Tims an' me was talkin' t'other night over to his place. I hed stopped on the way back from the store an' we was swappin' fish yarns. Seth, says he, you been a-writin' fer that fish paper fer a long while back now, an' I reckon mebbe the editor might give me a swing at it ef you passed the word. Well, Mr. Editor, I'm a sayin' thet Jerry an' me's good pals, so mebbe I'll sign off fer awhile an' let him git in his say. He's a rarin' good fisherman, an' there ain't many about these parts thet kin give it straight from the shoulder better'n he does. I'll be readin' what he tells the boys an' here's a-wishin' 'em the best trout fishin' time they ever hed.

Your Old Pal,
Seth

AND THESE FINE RAINBOW TROUT FOUGHT PLENTY HARD BEFORE THEY WERE LANDED BY COL. AUGUSTINE S. JANEWAY, DEPUTY ADJUTANT GENERAL

Dry Fly Casting

By CHAS. M. WETZEL

THE angler who consistently catches trout, after others fail, does not possess a mysterious affinity with the fish as some firmly believe, but rather is the type of individual who makes a little preliminary study of each pool before attempting to wet a line. This study may include: a speculation as to the locality where fish may be hovering; the length of time which should elapse before casting—a period necessary for the trout to recover their equanimity after the usual cautious, yet blundering approach of the angler; the direction and intensity of the stream currents; and the most advantageous position for casting the fly. The first two, I shall pass over briefly, devoting more attention to currents and the avoidance of drag—the curse of the dry fly fisher.

The majority of us fish too fast. Never be in a hurry and always exercise the utmost caution in approaching a pool. The latter is most imperative as most of us underestimate the vision of the trout. Approach the pool from below, preferably from the shore as the trout are always lying with their heads up-stream, keenly on the alert for insects that may be carried down by the current. Tread softly so that vibrations will not be set up in the ground. If it is impossible to obtain the desired location without disturbing the trees and bushes bordering the creek—sit down and rest by the pool for at least five minutes. Don't be disturbed if cloudy water is coming downstream, caused by a fisherman wading ahead of you; and banish the thought of making a wider detour around him. Rest the pool an additional ten minutes; the time can be profitably spent exploring the stream bed and learning some of the mysteries of aquatic insects—a diversion almost as fascinating as fishing.

We will assume that the angler has made such an approach to an imaginary pool having a large rock in the center similar to that illustrated in Fig. 1. The sketch is more or less drawn from memory of a similar spot on the right hand branch of Hammersley Forks. We will also make the assumption that the angler is a novice in the art of fly casting and that he has taken a position on the right hand bank, designated by the letter "X."

As can be seen the current which was moving uniformly becomes separated or deflected as it moves around the rock and its pace is accelerated thereby on both sides; especially so near the right bank, where due to its narrow confines it moves very speedily. Immediately below the rock is a spot where the water mills around, circling in a manner similar to that of a whirlpool. Trout occasionally lie in such a spot, but they prefer to take up a position just at the edge of the swift water where I have so designated them.

The novice has cast his fly immediately below the rock where the water is barely moving, so that the line and leader now lay extended on the water diagonally upstream. Immediately the current gets to work and the fast water striking the line causes it to belly sharply downstream. The fly at the end of the leader can offer no resistance in preventing this down-stream curve and consequently it must follow along. It now travels over the water diagonally downstream, cutting through the currents like a thing possessed—totally unlike the natural insect which serenely rides the waves, content with whatever course the current may choose to carry it. And that is drag—the bane of the dry fly fisher. Is it any wonder that the sight of the fly moving so unnaturally over the water oftimes causes the trout to cease feeding?

Before passing on to the various methods of eliminating drag, a few words on the principles of fly casting would not prove amiss. To one who is not familiar with the art, a day spent on the stream with an expert will save much time and trouble. Many little pointers, difficult to describe, can be quickly learned when seen. To those who are unable to accompany an experienced fly caster, an excellent article on the elementary principles of fly casting which appeared in the ANGLER, can well be read with profit. This article, by our able Fish Commissioner Kenneth A. Reid, first appeared in the March, 1934, issue and due to popular demand, it has been reprinted once or twice since that time.

One of the worst faults of the novice is in applying too much strength to the cast. It is not muscle but art that is required, so persevere and keep on trying. Always lift your fly off the water when the line is more or less taut. To accomplish this it is usually necessary to strip back through the guides of the rod, the slack line, which is always held in loose coils in the left hand. Towards the end of the forward cast, these coils can be "shot" through the guides or in other words, the momentum of the line carries them through. To facilitate this shooting of the liue the rod tip should be lowered at the termination of the forward cast, so that the least possible resistance is encountered in the line passing through the guides. Only practice will teach one the correct angle of holding the rod to obtain the maximum length of cast. Large diameter guides on the rod help considerably in getting this additional distance.

The importance of the left hand in casting cannot be too greatly emphasized, for its functions are manifold. When striking the fish a firm grip should always be kept on the line to insure setting the hook. It is also used in holding the coils and in stripping off line from the reel in getting out the requisite distance. Therefore throughout your casting always have control of the line with the left hand.

The instant you see a rise at your fly, strike quickly but not too strongly. Sometimes a mere flick of the wrist is all that is necessary, then again when a hook is cast or a long line is out, you will have to use your arm and more force. Your fish hooked, keep him well in hand. Don't give him any more line than is necessary. If he should start rushing towards you, quickly strip in line with the left hand. Later on, when you are in control of the fish, the line can be wound on the reel. If he is determined to run, let him go, but keep your left hand on the line and put all the strain on him you safely can, increasing the stress the further he goes. Keep the rod tip well up throughout the battle and when you have turned the fish start reeling in line. When he runs again, get his head slightly out of water as this quickly exhausts him. Be careful not to raise him too far, for in his struggles he is likely to escape. Now when you have worked him in close, slip your landing net into the water, lead the fish over it and quietly raise it up over him. Never make any abrupt moves or lunges at the fish with the net, unless of course he has disengaged the hook and escape appears imminent. At such times,—it is unnecessary to add,—one will be guided by his own involuntary reactions, the whole sprinkled with considerable blasphemy.

The trout now safely ereeled, we will return to casting the fly.

The technique of casting a hook in the line represents the highest principle in the art of dry fly casting and be warned in advanee that it is a most difficult accomplishment. Very few have mastered its principles, mainly on account of its difficulty and because there has been comparatively little written on the subject. At the outset let me say that I make no pretense of being a master along these lines, yet I have successfully cast hooks over rising fish and can well appreciate the merits this form of angling entails.

As before mentioned its main advantage lies in overcoming drag. Another almost as important is that the line and leader follow downstream after the fly over the rising trout. This is a most important feature as no line appears over the fish which might unduly alarm it. Everyone knows that the most successful manner of dry fly fishing is to have only the fly on the water, but as this is usually impossible, except on small brushy streams, the hook method will prove an excellent substitute.

Diagrams 2 and 3 have their limitations in being applicable only to the side east. Ths is similar to the common overhead cast except that all the work is performed in a horizontal plane parellel to the water.

Refer to Diagram 2 where the usual close spaced lines represent the swift water. The rings indicate the spot where a trout has just risen on the right hand side close to the edge of the swift water. The angler being right handed is at the position designated by the letter "X" on the left hand bank.

In a horizontal plane parallel to the water, make a few false preliminary casts, stripping off line with the left hand until the required estimated distance is out. Check the final cast when the forward motion is about three-fourths completed, so that the large loop in the line will not have an opportunity of unrolling or straightening out. The line and leader will now lay on the surface extended in a hook; and if the cast has been successfully accomplished,

(Please turn to page 14)

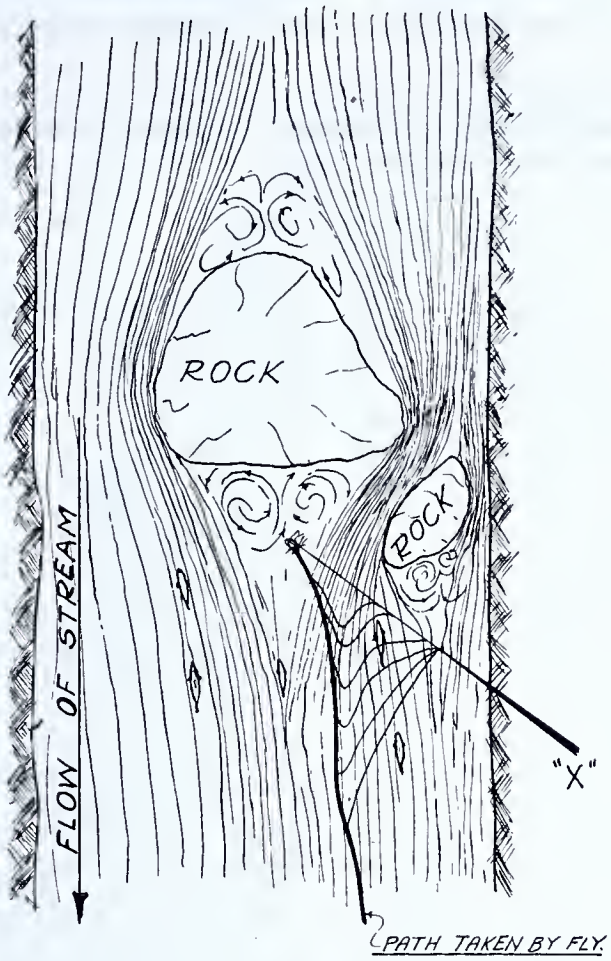


FIG. 1.

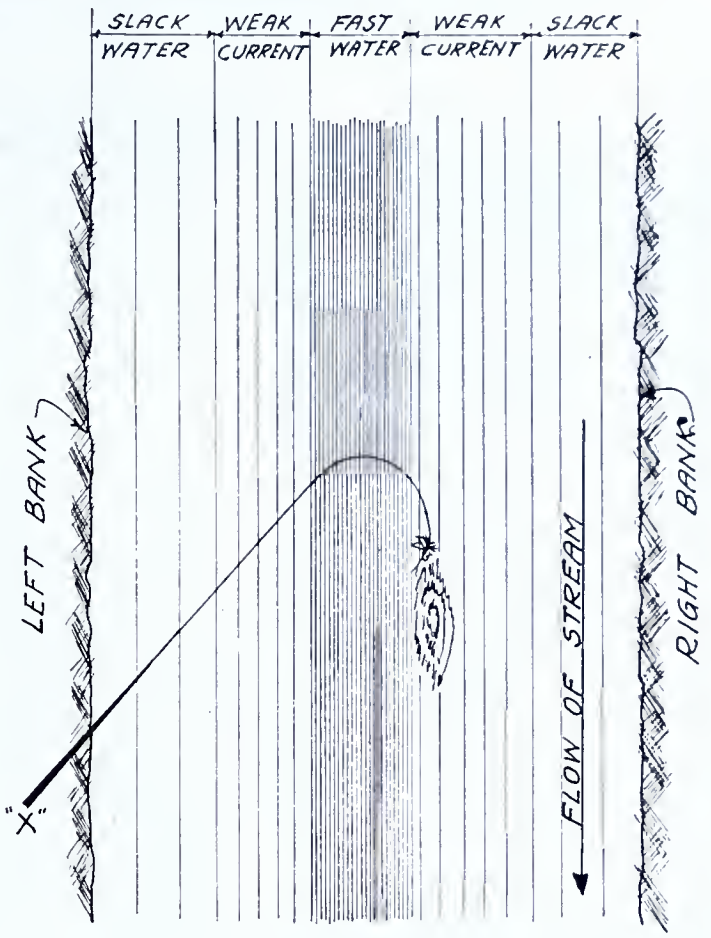


FIG. 2.

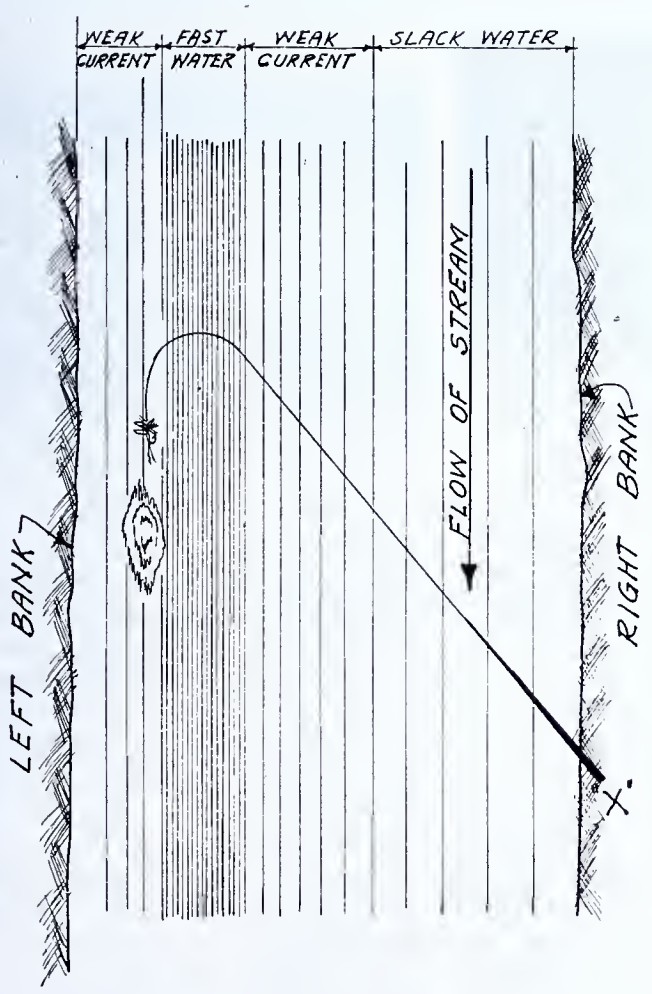


FIG. 3.

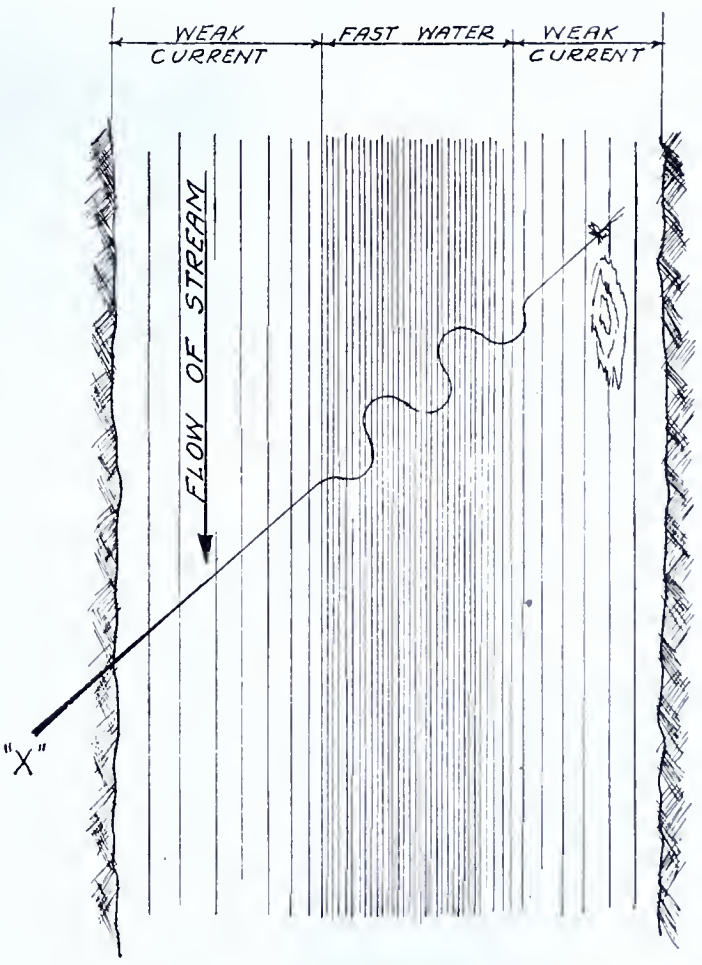


FIG. 4.

Witzel 12-35

The Federal Part in Pollution

An Analysis of the Report of the Special Advisory Committee on Water Pollution, National Resources Committee

By P. G. PLATT

Member, Sanitary Water Board, National Director and Honorary President of Pennsylvania Division, Izaak Walton League of America

THE long awaited report of the special committee appointed to draft a plan for Federal participation in the eradication of water pollution is at hand. The report is an outgrowth of, or rather an offshoot from the Dern-Lonergan Conference, and contains much food for thought. Its conclusions and proposals are, in the main, contradictory to the statements of fact concerning existing conditions and efficient methods of correction.

The first paragraph of the introduction to this document inspires great hopes in stating that the Water Planning Committee of the National Resources Board concluded (1) "That the problems of stream pollution by industrial waste and municipal sewage are outstripping the best efforts of those whose function it is to effect an economical and rational balance between sensible regulation and industrial expansion." Paragraph (3) then states: "That control of stream pollution is generally and logically a function of State government, and in most states existing legal authority to limit the degree of water pollution must be exercised with rare judgment to prevent curtailment of industry which might produce undesirable social and economical consequences." Conclusion (1) is self-evident. (3), however, nullifies the well worded preceding paragraph. It is true that attempts at control of pollution in the past have been an exclusive function of states, yet this precedent should not be considered cause to continue a policy which has been proven to be a failure.

Water courses are by their very nature, interstate. They never can be confined to man-made political boundaries. As "Ken" Reid so ably stated in the Dern-Lonergan Conference, "There are many points of similarity between an interstate transportation system and an interstate river system, and Federal regulation is just as necessary for properly handling the pollution of the latter as it is for controlling the commerce of the former. Both are interstate transportation systems, but the river runs only one way and collects all the freight on its pollution cargo from the down-river communities and industries that must use its water." All water gravitates to the sea, and in so doing, becomes a matter of Federal concern.

The present status of Federal jurisdiction over water pollution is almost exclusively investigatory. It has power to order abatement of discharge of solids into navigable waters where such discharge interferes with navigation. There is also some power to control discharge of oil in waters where the tide ebbs and flows. The Public Health Service is essentially a research organization which concerns itself chiefly with standards of drinking water. Beyond this, the Federal Government is impotent in matters relating to pollution, and it was with this thought in mind that the Dern-Lonergan Conference was called. The report goes on to mention that the states themselves do not favor broad Federal jurisdiction over the pollution evil. It is only natural to expect that state agencies would be disinclined to admit their impotence in dealing with the problem. Unless the Federal Government has definite jurisdiction over the pollution problem, we can never expect any degree of uniformity in state legislation, no matter how sincere these states might be in their efforts.

The report indicates that fourteen state laws afford no control over pollution whatever; twenty-six afford partial, or ineffective control, while eight states "Appear to permit a maximum degree of control." Without definite Federal jurisdiction, industry of the first two groups will not soon, if ever, permit adoption of laws which would tend to lesson its present competitive advantage over those who are required to live up to certain standards of decency and obligation towards the public. In many states, existing laws specifically exempt certain industries, municipalities, areas or rivers. In many cases, phrasing of state laws is so vague as to make them inoperative. In other cases, there is lack of mandatory powers of enforcement, while one of the most common faults is the lack of financial appropriation to the administrative agency.

SLUDGE ON CODORUS CREEK, YORK COUNTY, ONE OF THE MOST VILELY POLLUTED STREAMS IN PENNSYLVANIA

A table showing state funds available for stream pollution control is most illuminating. Of the forty-one states reporting on this subject, four report no funds whatever; ten report no specific funds available, while the two states in the highest bracket, with appropriations of $100,000 to $150,000 mean only a yearly per capita expenditure of 2.7 cents, based on urban population. A fair average for all states would appear to be considerably less than one-half cent per capita per annum, based only on *urban* population. It must also be borne in mind that these appropriations are interwoven with other phases of sanitation, so that only a minor fraction is used in actual control of water pollution. "The data obtained suggest that in most states, neither the present personnel nor the funds available are adequate for the proper and efficient administration of water-pollution control."

One of the greatest stumbling blocks in the path of the disposal of municipal sewage is the statutory limitation on bonding and taxing powers of municipalities. In order that an orderly and uniform plan of progress can be consummated with regard to the problem of municipal sewage, it would seem essential that this last recommendation be wholeheartedly accepted. In the meantime, it is to be hoped that the various initialled agencies for dispensing Federal funds will adopt a policy whereby no municipality will be allocated any funds whatsoever except for sewage collection and treatment, until such obligation has been fulfilled.

Considerable reference is made to the establishment of "Standards of Water Quality." Conservationists will generally be opposed to any attempt to set standards short of purity. The ultimate standard of quality is that of Common Law, viz: "Unimpaired in quality and undiminished in quantity." It is inconceivable that any form of legislation or administration would produce this idealistic condition immediately, yet it is a goal which should ever be in mind. In the meantime, let us not permit the adoption of laws or standards which would tend to legalize any form of pollution.

Referring to water pollution from a biological consideration, the report states, "In addition to the direct influence of water pollution on aquatic life, waterfowl and various other forms of wild life, there are resultant economic and social losses of great complexity. The role of water in these social and economic changes is difficult to evaluate."

In dealing with existing state anti-pollution laws, the report states that even where such laws and administrative personnel appear adequate, they are not producing satisfactory results. "The basic causes of lack of progress lie in public apathy and in the cost of remedial measures." And now for a statement with which all conservationists will agree: *"It is needed to bring about a public realization of the fact that clean streams represent an economic value to the community which would more than offset the cost of the necessary treatment works."*

As a result of the Dern-Lonergan Conference, two proposals were presented by the Committee. One advocated direct Federal control of the pollution problem, setting up an agency with power to finance and police a definite plan of water purification and use on a National basis. The second proposal advocated coordination of existing state laws and formation of state compacts and agreements. Under this plan, the Federal government would act only in an advisory capacity in enforcement, but would assist somewhat in financing. The Conference, by a substantial margin, voted for direct Federal control.

The report of the National Resources Committee indicates that in practically every case where interstate negotiations, agreements, compacts, etc., have been consummated, the result has been unsatisfactory. In every case the parties to the agreement try to get the best of the bargain, with the result that negotiations are drawn out for years, there is nothing permanent in the final agreement, and one state invariably gets the best of the bargain at the expense of the others.

In spite of the above findings, together with the vote of the previous conference, the National Resources Committee Report now advocates the state compact plan. The final recommendation of the Committee is that no move be made to strengthen Federal anti-pollution laws, but that the Potomac River drainage basin be made an outdoor laboratory to demonstrate what can be accomplished by means of negotiations and active cooperation between the four states affected, viz: Maryland, Virginla, West Virginia and Pennsylvania. It is suggested that administration of the project be placed in the hands of a committee of five members, one from each of the four states mentioned, the fifth to be a representative of the National Resources Committee. Estimated cost of the project, including all forms of domestic and industrial wastes, research and administration is $15,000,000. It must be borne in mind that no appropriation has been made. The document is merely a recommendation that such appropriation be made available. The success of the proposal hinges upon three factors: the personnel of the administrative committee; the securing of appropriations sufficiently large for the purpose; the ability to secure the necessary cooperation of the four states whose effluent affects the drainage basin.

The findings of the Special Committee's report are so important as to warrant a more constructive recommendation than is the case. The recommendation is more bureaucratic minded than action conscious. It is likely that a real conservation bill, calling for direct Federal control of the pollution problem will be introduced in the present session of Congress. Its sponsor will undoubtedly be Senator Lonergan of Connecticut, who arranged for the original conference in Washington. Watch for this bill, you conservationists, you who believe in Dr. Theobold Smith's statement that "THE AMERICAN PEOPLE MUST DESTROY WATER POLLUTION OR IT WILL DESTROY US."

ANOTHER VIEW OF THE CODORUS

Palmerton Girl Wins Snake-Killing Medal

During the watersnake killing campaign conducted by the Fish Commission last summer, boys interested in this phase of Pennsylvania's program for better fishing did not monopolize the limelight by any means. That feminine outdoor enthusiasts played an important part in the drive to rid Pennsylvania streams of these predators is illustrated by the interest taken by Miss Jean Brown, of Palmerton, R. No. 1. whose picture accompanies this article.

Outdoor sports, hunting and fishing, are hobbies with Jean. Like her father, Elmer Brown, a member of the Palmerton Rod and Gun Club, she is interested in everything pertaining to conservation. When she was six years old, she killed her first watersnake, and since that time has been active in thinning down the number of these reptiles.

Writes Ira J. Bleiler, secretary of the Palmerton Rod and Gun Club:

"This year, when Jean learned from a Palmerton Rod and Gun Club officer of the Junior Conservation medals being given by the Fish Commission to any boy or girl killing ten or more watersnakes, she immediately became interested and proceeded to qualify. As soon as she had killed ten snakes, she applied for her medal, although she has since that time killed many more. A few of the watersnakes killed this year were in a small feeder stream in which local sportsmen had last spring stocked fingerling trout furnished by the Fish Commission, so we felt that she certainly deserved some recognition for this splendid work.

"She has also during the past few years killed three copperhead snakes which she herself skinned and then mounted the skins. Jean has likewise preserved the skins of some of the larger watersnakes. Incidentally, she is an honor student in her class in the Palmerton High School."

PERKIOMEN SPORTSMEN ANNOUNCE PRIZE WINNERS

The regular monthly meeting of the Perkiomen Valley Sportsmen's Association was held in the Borough Hall, Schwenksville, on Thursday evening, January 9th, with one hundred adult and Junior members present.

Reports of the various committees, were very gratifying, and the vermin contest, conducted for the first time, proved a big success.

There were 1425 crows killed during the year by members, 31 hawks, 12 foxes, and 389 watersnakes.

The prizes for the vermin contest were won by the following: Watersnakes, first—181 snakes, William Wireman, Schwenksville, received a Weaver telescope; second—133 snakes, .22 calibre Winchester rifle won by T. Jordan, of Hatfield; Roy Landis received first prize in the Junior membership class in the snake killing contest and received a .22 calibre Winchester rifle, having killed 65 snakes.

Joseph Bechtel, of Schwenksville, killed 160 crows and received first prize, a Weaver telescope, and Norman Moyer, of Skippack, received first prize, a hunting coat, for killing the most foxes, 5.

In the fishing contest, Hastings Ziegler, of Schwenksville, received first prize, a casting rod, for catching the largest bass, an 18½-inch smallmouth; Ross Koons, of Schwenksville, received first prize, a Kingfisher Surf reel, for catching the largest carp which measured 24½ inches; Samuel Horst, Schwenksville, received a Kingfisher Landing Net for catching the largest catfish, and Harry Cole, of Norristown, received the prize, a Kingfisher Cantilever fishing box, for the largest sunfish.

Officers for the coming year were elected as follows: president, Howard C. Shallcross, Graterford; Elmer S. Zepp, Hatfield, vice-president; S. L. Horst, Schwenksville, secretary; J. C. Markley, Schwenksville, assistant secretary; Abram B. Wenhold, Schwenksville, treasurer.

WINTER SCENE ON KANSAS VALLEY RUN, PERRY COUNTY TROUT STREAM

How About Your Tackle?

By KENNETH A. REID
Member, Board of Fish Commissioners

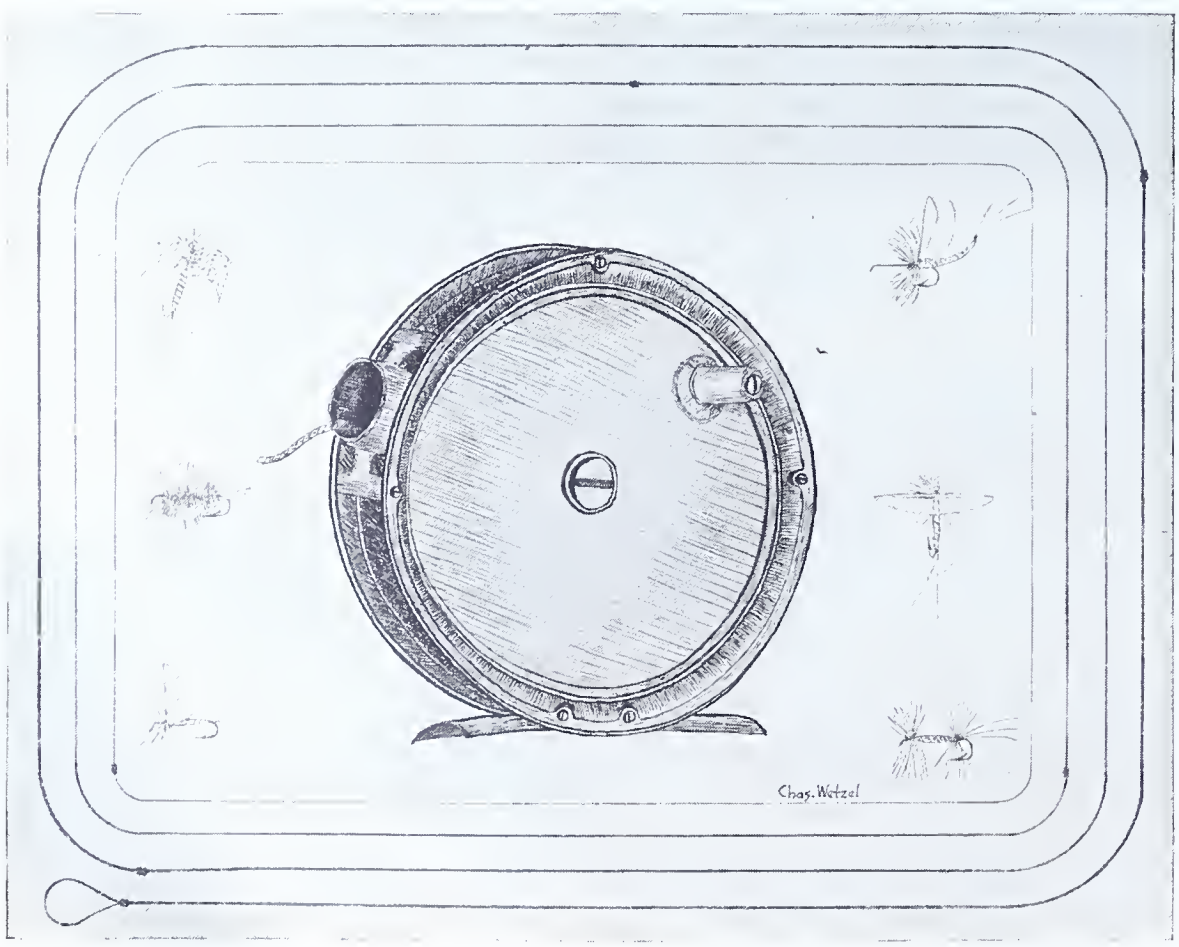
ABOUT the second Sunday of the coming April there will be a mad scramble in many Pennsylvania homes looking for tackle that was tossed carelessly aside one day last summer or fall when the owner used it for the last time of the season. In many homes the hunt will continue with increasing feverishness on Monday and Tuesday as closets, attic, and every conceivable corner is ransacked for some item that has so far escaped detection, for on Wednesday, April 15th, trout season opens, and the forgotten and neglected tackle again becomes the most important and valuable of one's belongings.

Even amongst those who by virtue of native orderliness or good memory, may have been spared the agony of a prolonged and frantic search, there will be many disappointments and heartaches. Perhaps the rod had a cracked tip or the windings were frayed, or perhaps the reel had a broken click spring when it was put away. And remember that moths have a fondness for trout flies costing from $2.00 to $3.00 per dozen and that they have been known to consume easily a gross during the winter in a single house—and that the radiator heat of the average home has a habit of loosening ferrules during the winter, even though they may have been perfectly tight when the rod was put away. So regardless of how secure you may feel about your tackle, it is none too early to get it out and go over it carefully while there is still time to make repairs or replacements.

First joint up the rod and see if there are any loose ferrules. If there are, you can feel the "hit" in the action as you flex it in false casts. If the eye cannot detect the faulty one, fell each one at the junction of the metal and the wood gently with the thumb and forefinger of one hand while the rod is flexed or whipped gently with the other. Sight along the rod while rotating it in order to discover any permanent sets it may have acquired, and make a note of your findings.

Now unjoint the rod and examine it for frayed or loose windings. Next, examine carefully the guides. If the rod has an agate first guide and top, they will not be worn, but they may be cracked, and if the rod has been used for more than a season or two, the metal snake guides are apt to be considerably worn from line friction. To be sure on this point, it is well to use a magnifying glass, and if they are worn to any extent so that they have sharp edges or grooves, they should by all means be replaced. It is poor economy to continue using a rod with badly worn guides, for they will ruin a ten dollar line, that with proper care should last you for at least three or four seasons, in as many days.

Finally examine the finish of the rod for any scales or checks in the varnish and for any sections of the cane that may be splintered or fractured. Here again it is advisable to use a magnifying glass and make careful note of any fractures in either the varnish or the cane that you may find. Remember that the finest rod in the world will quickly go to pieces without the protection of its waterproof coat of varnish, and that a coat of varnish with holes or cracks in it that will admit moisture to the wood, and particularly the glue between the strips, or the ferrule joints, is little better than no coat. If the varnish skin is clear, smooth, and in good condition except for a few scaled spots, it is preferable to merely touch up these spots rather than varnish the whole rod, for excess varnish slows the action of the rod and is undesirable; but if the entire surface is checked or ringed with hairlike cracks, the varnish is dead and brittle and should be entirely removed before fresh varnish is applied.



If your rod is really a fine one, which would normally cost from thirty to fifty dollars, and it should need any major repairs, I would suggest that you send it back to the maker, unless you are uncommonly proficient and experienced in rod repairs—in which case you have little business in reading what I have to say here. But if your rod needs only a winding or two replaced or a few scars in the finish touched up with varnish, there is no reason why you cannot do it yourself.

For varnishing a rod, use only the best grade of spar varnish. Under no circumstances use shellac, for the flexing of a rod requires a varnish that is tough and elastic, and shellac is by comparison, quite brittle. Practically all tackle stores carry special rod varnish put up in small bottles, which will be ample to varnish several rods. Select one from a reputable tackle maker, and preferably one that makes rods, and while you are there, get a small stick of ferrule cement and a spool of winding silk,—or a spool of ordinary sewing silk, size A, will do just as well. For applying the varnish, get a small quill camel's hair brush, which costs a nickle at the drug store, and it might also be advisable to get an ounce of spirits of turpentine for thinning the varnish. Then you will have a complete repair outfit except for any guides or mountings that may be needed.

The first thing to do is to reset any loose ferrules. If they are not pinned, they will come off readily when warmed over a candle or alcohol lamp. If they are pinned clear through,—as they should be near the end of the encased wood—these pins can easily be removed by tapping one end gently with a pin punch until the other end protrudes sufficiently to be gripped with a pair of pliers. If you have the misfortune to own a rod in which the pin is driven in from one side and does not extend through the other side of the ferrule, the best advice I can give you is to carefully avoid such construction in the next rod you purchase. A pin that goes through only one side of the ferrule has little holding value—except when you want to remove it, and then it is the Devil's own job to get it out. A manufacturer who cares no more for his rod or the unfortunate fisherman who uses it than to equip it with such rotten ferrules, is likely to have an inferior product in other respects as well. If the low price of a rod precludes the use of a good ferrule with a pin clear through, it is much better to use no pin at all.

Having removed the ferrule, scrape the

Fig 1

3 Threads folded over end of wood to be covered with ferrul: Temporarily held with winding or rubber band.

Fig 1A

Threads held on end with daub of cement.

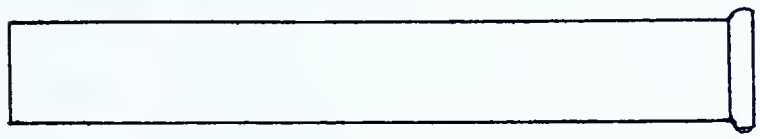


Fig 2.
Plain Ferrule.

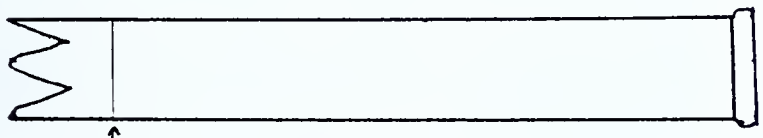


Fig 3

Same ferrule with file cut serrations and skirt filed down thin at end.

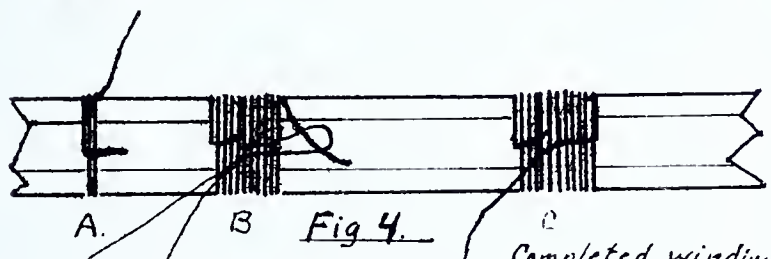


Fig 4.

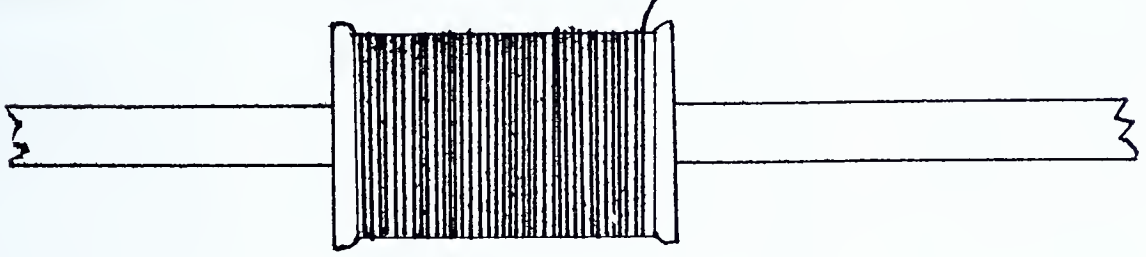


Fig 5

Spool of silk with lead pencil spindle.

old cement from the wood with the back of a knife, and remove that from the inside of the ferrule by heating over a flame and swabbing out with a rag on a stick, or a 22 gun cleaner. Now try the fit of the wood and ferrule. If there is too much clearance, the end of the wood may be wound spirally with silk. A better way is to bend three short strands of silk over the end of the wood with their ends folded back along the wood so that each of the six resulting threads lies longitudinally along a separate strip of cane. A thin smear of ferrule cement, or a rubber band or small wrapping beyond where the ferrule will reach, will hold them in place. If the fit of the ferrule is not true, but gives a set to the rod at this point, it can sometimes be corrected by judicious placement of these threads as spacers or wedges.

When you are all ready to cement the ferrule, warm the cement over a flame until it starts to run, and at the same time, holding the metal ferrule with a pair of pliers, warm it and the wood—(you really need three hands to do this effectively)—smear the melted cement over the wood, being careful to cover the end, insert the wood in the ferrule and push home with a firm pressure straight down on the floor. Quickly wipe off the soft cement that has oozed out around the ferrule, and sight along the joint to see if the ferrule is in true alignment. If slightly off, it can sometimes be corrected while the cement is still plastic by pressing the ferrule at the proper angle to the floor while gripping the wood close to it.

If one or more of the rod joints have acquired a set, this can sometimes be corrected by judicious heating of the bent part over the flame of a gas stove, or in an oven at a low temperature of about 160 degrees. The heat will soften the glue between the strips of bamboo so that its resiliency will be gone as long as the glue is plastic, when it can be easily straightened by corrective bending. It is a wise precaution to make

a tight spiral winding with a stout cord over the part to be heated so that there will be no chance of the strips of bamboo spreading apart when the glue is heated. If the heating is to be done over an open flame, wetting the cord will suffice to keep it from burning while the joint is rotated above the flame.

Split or serrated ferrules that are strongly wound over the split skirts, materially reduce the hazard of breakage that exists where the comparatively soft and flexible wood meets the hard and inflexible metal of the ferrule. If your ferrule is not split or serrated, you will do well while you have it off to make it so. With a fine file like a platinum file, thin down the last quarter inch of the skirt to a paper edge; then using a glancing stroke with the smallest of three cornered files, cut either four or six notches or serrations, depending on the diameter of the ferrule. If the file cuts are ragged, finish off on a fine carborundum rock. Then after the ferrule is cemented in place, this tapered part and about a quarter of an inch of the wood beyond it should be wrapped with silk as tightly as the thread will stand. When the wrapping is given three or four coats of varnish, it will form an effective seal against moisture getting in and loosening it or weakening the encased wood, as well as eliminating the abrupt stress on the wood at the formerly inflexible edge of the metal.

In replacing snake guides it is well to file down the shoes to a paper edge, so that the ends can be wound over smoothly, and if they are unnecessarily long, cut them off to only the length necessary to hold them securely. The more and the wider windings you put on a rod, the slower and poorer will be its action. I know because I have been playing with split bamboo rods since the days when some manufacturers erroneously sold solid wound rods at fancy prices as the ultimate in rods, and I once made the mistake when refinishing my favorite rod, of winding it solid from butt to tip. After that tedious operation, the action was never any good until I learned better and removed the silken case—when its former snap and resiliency returned. Practically all manufacturers now make at least their better grade rods with windings only at the guides and ferrules—and such windings as there are, as narrow as possible. If a rod is so poorly glued together as to have to rely on a lot of windings to hold the strips of bamboo together, it is not worth the effort to wind it—except in cases of emergency.

Sometimes one strip of a joint will be found to be fractured or splintered. A silk winding extending over this part and for about ⅜ of an inch beyond on either side will often make such a joint serviceable for several years. It has been my experience, however, that eventually the rod will break at such a spot.

When it is necessary to remove the old varnish and give the rod a new coat, cut the windings with a knife, peel them off with the blade and then scrape or scale the brittle varnish with the back of the blade. When it needs to be removed, the varnish is much more brittle than fresh varnish, and can be taken off quite successfully in the above manner. Of course, a good varnish remover will do a spendid job—in fact too thorough a one as it is likely to remove or weaken the glue holding the strips of wood together. The little saving in time is not worth the gamble of ruining the rod.

In making a winding, lay the end of the thread along one of the strips pointing in the direction the winding is to be made, hold it in position with the thumbnail of the left hand, and winding over and away with the right, make two turns over this end with the thread close up against the thumbnail. This will bind the end down so that the thumb may be released and the winding continued. Winding under about ⅛ inch of this first thread end will be sufficient, and any surplus length should be snipped off. When the winding is within five or six turns of being completed, wind over a three-inch loop of silk with the loop pointing in the direction of the winding and extending about half an inch ahead. When the winding is completed, thrust the end of the thread through the loop and pull the ends of the loop. This will pull the finishing end of the winding back under about five turns of silk and hold it securely. Cut the loose end as close as possible with a razor blade. The result will be a neat and secure winding with no protruding ends or knots.

I have seen elaborate diagrams and descriptions of mechanical winding contraptions, but the best arrangement I have ever seen requires no equipment other than one of the round cedar lead pencils costing a penny. Thrust the pencil through the hole in a spool of silk thread. Sit down in a comfortable chair with the pencil crosswise under your thighs and the spool of thread between them. By slightly raising or lowering the thighs you can place any desired tension on the thread as it unwinds from the spool, leaving both hands free to rotate the rod and control the winding. The thread should come off the spool so the direction of rotation will be toward you and should come up over the front side of the rod joint as the latter is rotated toward you—both spool and rod rotating in the same direction. With the spool rotating in this direction, the tendency will be to roll in toward you, instead of away from you and off the chair. Once you try this simple method, which greatly aids both neatness and speed, you won't want to fool with any other.

Before varnishing a rod, see that the surface is quite clean and entirely dry. If the varnish is not sufficiently thin to flow quite freely, thin it down with about 15% of spirts of turpentine. Its fluidity will also be improved by warming, which can be accomplished by setting the bottle on a radiator that is not too hot to touch, and then in a pan of warm water to keep it from chilling while you are applying to the rod. Several thin coats of varnish are better than one thick one—in fact you should use varnish sparingly as its only function is to protect the wood from moisture, and a thin coat, properly applied, will do this as well as a thick one. Varnish has no resiliency, and surplus applications merely deaden and slow the action of the rod. Furthermore, a thick coat will more readily check and crack from the bending of the rod than a thin one, and for this reason does not afford as good protection.

If you are refinishing a rod, apply three coats of varnish to the windings first. These will soak into the silk and securely cement it to the wood, so that the next two coats, applied to the whole rod, will give a smooth and even finish over windings and all. Allow each coat to dry thoroughly before the next application. This will normally require from 24 to 48 hours. The joints should be suspended on strings to dry, and they should not be hung close to a wall as varnish has a tendency to creep toward a close object. Finally, if the cork grip has become dirty and grimy, a little acetone on a rag will make it look like new.

219,789 LEGAL TROUT STOCKED IN DECEMBER

Brook, brown and rainbow trout over legal six-inch size were heavily stocked in Pennsylvania trout streams during December by the Fish Commission. Of 219,789 trout distributed, 59,200 were brook trout, from 7 to 8 inches in length, 39,900 were rainbows, 7 to 9 inches, and 101,600 brown trout, averaging 7 inches. In addition to trout released, 1,375 adult bullhead catfish averaging 9 inches in length, 16,000 minnows averaging 3 inches, and 200 adult bass, averaging 12 inches, were stocked.

Following are the waters in the various counties to which distribution was made:

Adams—rainbow trout, Chambersburg Water Co. Reservoir on Birch Run, East Branch Little Antietam Creek; brook trout, Toms Creek.

Beaver—rainbow trout, Bradys Run.

Bedford—rainbow trout, Thomas W. Koon Lake.

Berks—brook trout, Mill Creek, North Kiln Creek, Mill Creek or Fishers Creek, Furnace Creek, Moselem Creek, Hay Creek, Indian Creek, Northwest Branch of Perkiomen Creek, Scott Run, Cold Run, Pine Creek.

Blair—brown trout, Piney Creek, Clover Creek.

Bucks—brown trout, Pine Creek.

Butler—rainbow trout, Thorn Creek.

Carbon—rainbow trout, Quakake Creek; brown trout, Pohopoco Creek, Wild Creek.

Centre—bass, Moshannon Lake, rainbow trout, Little Moshannon Creek, Stone Creek Kettle Dam, Bald Eagle Creek; brook trout, Pine Run; brown trout, Little Moshannon Creek, Bald Eagle Creek, Elk Creek, Marsh Creek, Hosler Dam, Logan Branch, Pine Creek, Penns Creek.

Chester—bass, Chester Creek; brook trout, Pusey Run, Birch Run, French Creek, Doe Run; brown trout, Officers Run, White Clay Creek, Middle Branch of White Clay Creek.

Clarion—rainbow trout, Toms Run.

Clearfield—brook trout, Bilger Run, Medix Run, Bennetts Branch of Sinnemahoning Creek, Little Laurel Run, Mountain Run, Montgomery Creek, Whiskey Run, North Wilmer Run, Upper Three Runs, Sawmill Run, Hackenberry Run, Gifford Run, Moshannon Creek, Sandy Creek; brown trout, Laurel Run, Mosquito Creek, Lick Run, Sugar Camp Run, Little Clearfield Creek.

Clinton—brook trout, Hyner Run; brown trout, Lick Run.

Columbia—brown trout, Fishing Creek.

Crawford—brook trout, East Branch Muddy Creek, North Branch Middle Creek, Mosey Run, Kelly Run, Middle Branch

WINTER SCENE ON LACKAWAXEN, WAYNE COUNTY TROUT STREAM

Sugar Creek, Sandy Creek; brown trout, Thompson Run, Little Sugar Creek.

Cumberland—rainbow trout, Furnace Run, Means Run; brook trout, Alexander Spring Run, Green Spring; brown trout, Yellow Breeches Creek.

Dauphin—rainbow trout, Clarks Creek, South Fork Powells Creek.

Delaware—brown trout, Ridley Creek.

Elk—brown trout, Mosquito Creek; brown trout, Big Mill Creek.

Fayette—bass, Smock Dam, Lower Star Junction Dam, Cool Spring; brown trout, Big Sandy Creek, Big Meadow Run.

Forest—rainbow trout, Spring Creek; brook trout, Spring Creek; brown trout, West Branch Millstone Creek, West Hickory Creek.

Franklin—rainbow trout, West Branch Little Antietam Creek, East Branch Antietam Creek, Falling Springs Creek, Stony Point Dam on Furnace Run; brook trout, Conococheague Creek, Roe Run, Trout Run, East Branch Little Antietam Creek; brown trout, West Branch of Conococheague Creek.

Huntingdon—rainbow trout, Greenwood Furnace Dam on East Branch Standing Stone Creek; brown trout, Standing Stone Creek, East Branch of Standing Stone Creek.

Indiana—brown trout, Yellow Creek.

Jefferson—rainbow trout, clear Creek, Cathers Run; brown trout, North Branch Red Bank Creek, Clear Creek, Manor Run.

Juniata—brown trout, Licking Creek.

Lackawanna—lake trout, Crystal Lake; rainbow trout, Lehigh River; brown trout, Lehigh River.

Lancaster—catfish, Safe Harbor Dam on Susquehanna River; minnows, Safe Harbor Dam on Susquehanna River, Conowingo Dam on Susquehanna River; brown trout, Fishing Creek, Big Chickies Creek.

Lebanon—brook trout, Evening Branch, Snitz Creek, Indiantown Creek.

Lehigh—brook trout, Big Trout Run, South Branch of Saucon Creek, Trout Creek; brown trout, Jordan Creek.

Luzerne—lake trout, Harveys Lake; rainbow trout, Lehigh River; brown trout, Wapwallopen Creek, Lehigh River, Huntingdon Creek.

Lycoming—brook trout, English Run; brown trout, Lycoming Creek, Little Pine Creek, Loyalsock Creek.

McKean—rainbow trout, Portage Creek, Large Run, Pennsylvania Pond; brook trout, Sugar Run, Two Mile Run; brown trout, Marvin Creek, Portage Creek, South Branch Kinzua Creek, West Branch Tuneneguent Creek, East Branch Tionesta Creek, Potato Creek.

Mercer—brook trout, East Branch Wolf Creek, North Branch Wolf Creek; brown trout, Little Neshannock Creek.

Mifflin—brown trout, Penns Creek.

Monroe—rainbow trout, Brodheads Creek, Lehigh River; brook trout, Leavitts Branch, Forest Hill Creek, Cherry Creek, Lake Creek, Kettle Creek; brown trout, Tobyhanna Creek, Sambo Creek, Big Creek.

Northampton—rainbow trout, Saucon Creek; brook trout, Saucon Creek, Mud Run, Martin Creek, Bushkill Creek, Jacobus Creek, Coffeetown Run, Monocacy Creek, Little Bushkill Creek, Little Martin Creek; brown trout, Hokendauqua Creek.

Perry—brook trout, Horse Valley Run, Shermans Creek, Brown Run, Houstons Run.

Pike—brook trout, Raymondskill Creek, Dwarfskill Creek, Savantine Creek, Red Rock Creek; brown trout, East Branch Wallenpaupack Creek, Lackawaxen River, Shohola Creek, Raymondskill Creek.

Potter—brook trout, Cold Branch Genesee River, East Branch Fishing Creek, Corbit Branch of South Branch of West Pine Creek; brown trout, Kettle Creek, Mill Creek, Oswayo Creek, Cowanesque River, Pine Creek, First Fork of Sinnemahoning Creek.

Schuylkill—brook trout, Pine Creek, West Branch Fishing Creek, Evening Branch Fishing Creek, Black Creek.

Snyder—rainbow trout, North Branch Mahantongo Creek; brook trout, Aigler Run, Brickhart Run, Kreep Gap Run.

Somerset—rainbow trout, Laurel Hill Creek, Kooner Lake; brown trout, Clear Shade Creek, Laurel Hill Creek, Big Piney Run, Wills Creek.

Sullivan—brook trout, Hogland Branch, Sullivan Branch, West Branch Fishing Creek; brown trout, Little Loyalsock Creek, Loyalsock Creek.

Susquehanna—rainbow trout, Starrucca Creek; brook trout, Gaylord Creek; brown trout, Starrucca Creek, Harmony Creek.

Tioga—rainbow trout, Pine Creek; brook trout, Long Run, Big Run; brown trout, Towanda Creek, Stoney Fork Creek.

Union—rainbow trout, Halfway Dam; brown trout, Pennsylvania Creek, North Branch Buffalo Creek.

Venango—rainbow trout, Little Scrubgrass Creek; brook trout, Horse Creek, Little Sandy Creek; brown trout, Little Scrubgrass Creek, Pithole Creek.

Warren—rainbow trout, Farnsworth Creek, Pine Creek; brook trout, Minister Run, Four Mile Creek, Irvine Creek, Ackley or Reynolds Run, East Branch Caldwell Creek; brown trout, West Branch Caldwell Creek, Brown Run, West Hickory Creek.

Wayne—rainbow trout, West Branch Wallenpaupack Creek, West Branch Lackawaxen River; brook trout, West Branch Dyberry Creek; brown trout, West Branch Lackawaxen River, Wallenpaupack Creek.

Westmoreland—brown trout, Jacobs Creek, Tub Mill Run, Lynn Run.

Wyoming—rainbow trout, Bowmans Creek.

NOVEMBER IDEAL MONTH FOR PIKE

Writes Warden Russ Womelsdorf of Kingston, Luzerne County:

"That November is an ideal month for wall-eyed pike fishing has been proven many times over by George Bushkar, 107 5th Street, Wyoming, Pa., and many other Luzerne County fishermen. Weather conditions are sometimes not so pleasant during that month, but they state that the wall-eyed pike seem to have a ravenous appetite at that time.

GEORGE BUSHKAR WITH HIS NOVEMBER CATCH OF PIKE AND BASS

"During the month of November, for several successive years, Mr. Bushkar has taken many beautiful specimens of wall-eyed pike from the famous North Branch of the Susquehanna River. One of his finest catches was made early on the morning of November 26, 1935, in the North Branch, at Coxton, Luzerne County. The thermometer registered quite low on that morning but he was well rewarded for his efforts while casting artificial plug bait, for about two hours, from the shore. This catch consisted of five wall-eyed pike, ranging from 19½ to 27 inches in length, the largest one weighing eight pounds, and two smallmouth bass, measuring 14 inches each. This catch, except one smallmouth bass, is shown on the accompanying photograph.

"It has also been demonstrated that, during the month of November, conditions are best on the North Branch when the water rises a few feet above normal and becomes a little murky. Coves, where there is a swirl in the water, along the shore should be selected as the most likely places to find the wall-eyes lurking in their search for food at this time.

"Numerous fishermen in this section who are successful in taking fine catches of wall-eyed pike from Harveys Lake each year, wait for the month of November before wetting a line for that species, in that water."

Edward N. Jones Backs Move to Improve Streams

Honorable Edward N. Jones, Director of the Works Progress Administration in Pennsylvania has demonstrated that he is conservation-minded and has the viewpoint that is so vital to the conservation cause.

He appreciates the permanent value of projects that will last indefinitely and bring pleasure and healthful reereation to many thousands of our citizens. He is also a sportsman and claims his greatest weakness is "fishing." No one enjoys a day on the streams more than does Ed Jones, as he is familiarly known among his friends.

For the past several years we have been intensifying a drive for stream improvement, as the need for stream farming was demonstrated years ago. We realized that in order to furnish sport for our sportsmen it was necessary to increase the carrying capaeity or productivity of our streams just as a good farmer does with his soil. During 1934, the organized sportsmen in a number of our counties, some with their own funds and others with SERB funds, were able to accomplish some fine work. The Lancaster County Federated Sportsmen and the Blair County Federation were among the first to put over worthwhile projects. However, these were a mere beginning of what was accomplished in 1935 and with projects approved for 1936.

Through the splendid cooperation of Mr. Jones, his able Assistant, Mr. Walker and Field Representatives, at this time there are WPA projects approved in fifty counties. These projects will total over one-half million dollars and take in almost one thousand miles of stream. These fifty odd projects together with the work being done in our CCC Camps and two Transient Camps will eonstitute possibly the largest stream improvement campaign in the nation.

There is another large project at the present time approved by Mr. Jones, which will entail an expenditure of approximately three hundred thousand dollars for a large lake in Bucks County. Its management will

HON. EDWARD N. JONES

be turned over to the Board of Fish Commissioners who will maintain and regulate the fishing.

A WPA grant of fifty-three thousand dollars was also approved by his office for the erection and development of a large bass hatehery adjacent to our present Spring Creek project. This should be most welcome news to the great army of bass fishermen, as no doubt we will be able to more than double our present bass output when this plant swings into operation.

When this comprehensive program, as outlined, has been completed, the sportsmen of Pennsylvania will owe no small measure of credit to Honorable Edward N. Jones, Director of Works Progress Administration.

AN ANGLER'S DIRGE

By

"Reel Fisherman"

Some go fishing for fish,
But I go fishing for fun
I couldn't eatch a minnow
Yet, I'm a fishin' son-of-a-gun.

I fished the Susquehanna
And almost every Bay,
Why they make me buy a license
Is more than I can say.

I rid the streams of watersnakes
The gnats and mosquitoes, too,
Bullfrogs have the jump on me
Please, tell me what to do.

I've fished with worms and every kind
And tried a thousand flies,
Yet, I never caught a single fish
In my many thousand tries.

Perhaps, someday when I least expect
My labors will be rewarded,
When that happens, I tell you, friend,
The date will be recorded.

I'm going to spend one sixty more
And get my tackle out,
I'll give the suekers another chance
Then I'm going to turn to trout.

If they don't aecept my invitation
I'll try for pike and bass:
If the ballot is not in my favor,
I'll be tempted to turn on the gas.

DRY FLY CASTING

(Continued from page 6)

the bend of it will be located more or less symmetrically about the eenter of the swift water. The current in its downward course as usual puts a belly in the line, but it will travel some distance before artificial impetus is imparted to the fly. I have seen this same cast made with the hook extending towards the left—a most difficult attainment.

Now supposing for instanee that the angler has been forced to keep on the right hand bank, probably due to deep water or some other adverse condition. A trout is rising near the far side immediately across a stretch of swift water—that is, near the left side facing upstream. Different taetics must be employed here.

If the angler is left handed, the same procedure can be followed as that illustrated in Fig. 2. If not, he must place himself in the position of a left handed easter—that is, the casting will be done with the right arm only crossed over the left—all being done as before in a horizontal plane parallel to the water.

The two methods outlined above can be applied praetically to any conditions, provided there is sufficient space in the rear to allow clearance for the back cast. Unfortunately such clearance—due to brush and trees—is not always available and the overhead or snake cast may be resorted to.

Refer to Fig. 4. This cast is accomplished by retarding shooting of the line. A number of coils are held in the left hand and the usual preliminary false casts are made overhead in the air. On the final cast when the critieal time is sensed for shooting the line, delay its action, just a trifle. It will fall on the water as shown, sinuosities occurring in the line with the leader usually remaining straight. As usual the triek is to gauge the distance so that the sinuosities occur in the intervening swift water.

There are doubtless other tricks resorted to by anglers in eliminating drag, but the ones described above are probably the easiest to learn. All are more or less baffling and fortunate indeed is the angler, who can consistently place his fly so that drag will not oecur.

BOARD BUYS TRACT ON SPRING CREEK

The Fish Commission has announced purchase of a 97-aere tract of land adjoining the present Spring Creek Projeet, famous as the "Fisherman's Paradise," near Bellefonte, Centre County. More than a mile additional of Spring Creek, regarded as one of the outstanding trout streams in Pennsylvania, and located immediately above the present Spring Creek project, is now available to the Commission for stream improvement and conversion into another fish production unit. The two tracts, known as the Hartle and Bressler tracts, were bought through the Fisherman's License Fund.

In announcing the purchase, the Commission stressed the fact that a bass-production unit will be constructed. Plans are now completed for the building of 28 bass-holding ponds, and work on this project will be started soon. Experiments in raising bass in water available from Spring Creek have been markedly successful, and the new projeet, when completed, will comprise more water area in its ponds than that available in the present Spring Creek project, where

98 holding ponds for bass and trout are now being used.

The purchase will also double the size of the present highly popular "Fisherman's Paradise." Current deflectors, dams, covers and other improvement devices that have proved so effective in the "Paradise" will be installed in the section of stream just acquired.

Completion of the bass production unit is expected to greatly increase the Board's facilities for production of these popular game fish.

"HOOPSNAKE" INCIDENT TOLD BY COMMISSIONER SEYLAR

After all, might there be something back of the belief that blacksnakes on occasion will convert themselves into a hoop and roll downhill? The following interesting incident told by Hon. Leslie W. Seylar, member of the Board from McConnellsburg, Fulton County, sounds mighty convincing. Here it is:

"Every once in a while somebody breaks into print and writes pathetic articles about the poor but beneficial and kind-hearted blacksnake.

"Like the fellow who once sat behind me in a picture show, who was deeply touched by the sufferings of the poor hero or heroine, I forget which, between sobs he said to his companion 'Oh, isn't that pathetic? And it is getting patheticer and patheticer.'

"So it is with these sob writers who decry the cruel wretches who care to take the lives of the innocent and helpful blacksnakes. I have been a close observer of all kinds of snakes now for something less than a century, and can recall some rather unusual occurrences in which different kinds of snakes took an active part and blacksnakes in particular.

"Last June, for instance, I was sent for post haste to come to one of my cottages on Tuscarora Mountain, and kill a blacksnake which was swallowing the young robins in a nest located atop of a stone porch pillar. Taking a 12-gauge scatter gun I lost no time in getting to the cottage, but was too late to save any of the young birds, the snake having gobbled the whole bunch of four, which were just beginning to show pin feathers.

"Upon my arrival the snake instead of dropping to the ground as I had hoped, crawled up on the porch roof where I could not shoot him without tearing a hole in the roof, or in the side of the building.

"What was my amazement as I tried to maneuver so I could get a crack at him, to see him deliberately take his tail in his mouth and start to roll down that roof, and when he hit the ground which was in a split second, continue to roll for a distance of at least fifty yards when he disappeared around a turn in the road.

"Why didn't I shoot him when he started down the road?

"This is a question I just can't answer.

"I have been a fair to middling wing shot, on quail, ducks, grouse and all kinds of shore birds common to the eastern coast of the U. S. Have also maintained a fair average, but nothing very special, on large and small game, and am not as a rule scary or subject to "Buck Fever" or fever of any kind caused by any kind or sort of game, whether bird or animal, but perhaps the behavior of this particular blacksnake had the power of unhinging or unhooking some ganglia not before disturbed by the antics of bird or beast.

"Surely none will help agreeing that it was rather an unusual occurrence to see a common medium-sized blacksnake take his tail in his mouth and thus converted into a hoop, proceed under his own power from the top of a long porch roof to the ground at least twelve or fifteen feet below, and continue in his hoop formation fifty or sixty yards down a road.

"I wonder if such an occurrence might not have started the belief in the much mooted question of the hoopsnake?

"I once tramped on the side of a steel barrel hoop which promptly turned up and biffed me on the shin with the other edge, whereupon I threw it down on the road as hard as I knew how. A man was carrying a bucket of water for his radiator, and hearing the hoop behind him on the gravel leaped at least six feet sideways and spilled the water. Returning for another bucketful, he said he would not have needed it but that a damned hoopsnake had taken after him and he had to jump to get out of its way. I asked him if it made any noise, and he said 'No. Only that it hissed powerful.'

"Now nothing will ever convince that man but what he saw a hoopsnake, and by the same token, nothing will ever convince me but that I saw a blacksnake full of young robins convert himself into a hoopsnake and thus roll out of sight. Beside that, I have witnesses who saw the whole performance even if I needed confirmation."

FEDERATION OF ALL WILDLIFE INTERESTS NOW UNDER WAY

Federation of all groups and individuals interested in wildlife restoration and conservation into a nation-wide organization for concerted action is now under way, it was revealed recently in announcement by Charles E. Clarke, Jr., chairman of the committee on conservation of the United States Junior Chamber of Commerce.

Such a federation is one of the major objectives of the North American Wildlife Conference, which President Roosevelt has called to meet in Washington, February 3 to 7, inclusive, and the Junior Chamber has volunteered its services toward setting the wheels in motion.

The country has been divided into ten sections, each in charge of a sub-chairman,

WINTER ON THE UPPER ALLEGHENY RIVER. FAMOUS BASS WATER

who in turn has state chairmen under him. The plan calls for organization by county, state and nation of the country's sportsmen's clubs, nature leagues, conservation associations, farm groups and all others interested in restoration, either from a recreational or economic standpoint.

The various units of the federation will be entirely autonomous and continue to carry on the varied programs upon which they are now engaged, but they would unite in a large, general program entailing the broad principles of conservation and restoration. Each local group would be represented on a state council, which in turn would have representation on the general national council.

Mr. Clarke announced that the Junior Chamber is now engaged in interesting the groups involved, and assisting in setting up the mechanics of federation. At the North American Wildlife Conference in Washington the first week in February, a general federation will be formed and officers elected. Then a definite program will be drawn up for action.

It has long been recognized that lack of coordination among existing organizations is largely to blame for neglect of the country's wildlife resources and their consequent serious depletion, and the federation is designed to meet and correct this situation through united action.

Brown trout reach sexual maturity at approximately 34 months, and attain a much larger size than do brook trout. The brown trout fry subsist upon the umbilical sac for the same period as do brook trout fry under the same conditions.

HERE AND THERE IN ANGLERDOM

One of the nicest catches of game fish brought into Huntingdon last season was that made on the Raystown dam by Harry Miller of Huntingdon. Six bass, having a combined weight of 12½ pounds, comprised the catch. The largest fish measured 21¾ inches in length and another overlapped the yardstick at 18¼ inches.

Another catch of ten bass was made on the upper end of the Raystown dam in August by Maurice Bush of Bigler, according to Special Warden Bill Keebaugh of Hustontown. They were of nice average length, up to 12 inches. The Raystown Branch of the Juniata River on which the dam is located provided excellent fishing for bass and wall-eyed pike when the water was in condition.

Fuller Brook in McKean County, reserved solely for women anglers, afforded feminine disciples of Izaak Walton with some fine sport last season, according to Warden Robert J. Chrisman of Kushequa. Mrs. Marsh of Rew, caught 14 nice brook trout, while Mrs. Nina Repine of Bradford, scored with 15 brookies early last season.

Arthur Russell of Millvale, caught 10 big catfish and three carp while fishing in Conoquenessing Creek one day last season. The largest carp, he told Warden J. H. Bergman of Butler, weighed 8 pounds. It was 24 inches in length.

Al Slominski, pitcher for Shickshinny in the Tri-County Baseball League, is also an ardent carp fisherman. One day last season he hooked and landed a carp in the North Branch of the Susquehanna River that was 40 inches long, 23½ inches in girth, and weighed 30 pounds.

"My own experience and observation have taught me that one of the best ways to protect our trout would be to close headwaters of all trout streams," writes Charles Boyd of Connellsville. "To give the small fish this much needed protection is one of the best means to insure plenty of fish of legal size. Would like to read the opinions of other fishermen on this subject. Let's hear from some of you fellows who are interested in good trout fishing."

Fred Nanstiel and Ed Bush of White Haven scored a nice catch of brown trout on a Luzerne County stream one day last season, according to Warden Russ Womelsdorf of Kingston. Of four brownies taken, two each measured 17½ inches, one was 17 and one 14 inches. The combined weight of the catch was 14 pounds.

Eight big bullhead catfish comprised the catch of Ken Early, North Vandergrift, on Oneida Dam, Butler County, one day last season. They ranged in length from 12 to 20 inches.

Word has been received from Dr. J. N. Shipley of Erie, who assisted H. D. Hershey in landing the record muskellunge taken in Pennsylvania waters last year, that the big fish served as meat for a banquet at which 40 guests were seated.

Jordan Creek in Lehigh County, yielded a 20½ inch brown trout last season to George Bauscher of Allentown, according to Warden Joe Young.

Bert Ewer of Glenside, Montgomery County, caught three nice trout in Sandy Run last spring. A 21-inch brown trout was the largest in the catch, the two others measuring 11 and 13 inches. They were taken on white grubs.

Warden Leland Cloos of Middlebury Center, Tioga County, reported some nice catches of brown trout from Pine Creek last year. E. I. Wilson of Middlebury Center, made a catch of six fine brownies one day, the largest measuring 20 inches and weighing 2¾ pounds. Many suckers, catfish and eels were taken by fishermen from Marsh Creek.

After repairing the Laurel Hill Cooperative Trout Nursery and securing young trout for raising from the Fish Commission, the Westmoreland-Allegheny County Sportsmen's Association conducted a contest in which a bait casting rod, fly rod, rifle, shotgun or $50 in cash served as prizes. Money from the contest was to be used in financing the nursery and awards were announced at the picnic held at Idlewild Park on August 3d. This active sportsmen's association has been a big factor in providing better fishing through its efforts to re-stock public waters in southwestern Pennsylvania.

Vanscoyoc Run, Bigfill Run and Bald Eagle Creek in Blair County, Lender writes, were improved as a State Emergency Relief Project last year, according to Lender. Fishermen are expecting better trouting in these streams as a result of the work. Fifteen Deibler dams, a large number of log dams and boulder deflectors were constructed.

THREE BASS, TWO 19-INCH LARGEMOUTHS AND 16-INCH SMALLMOUTH CAUGHT IN PERKIOMEN CREEK BY WILLIAM RAYSON, EAST GREENVILLE

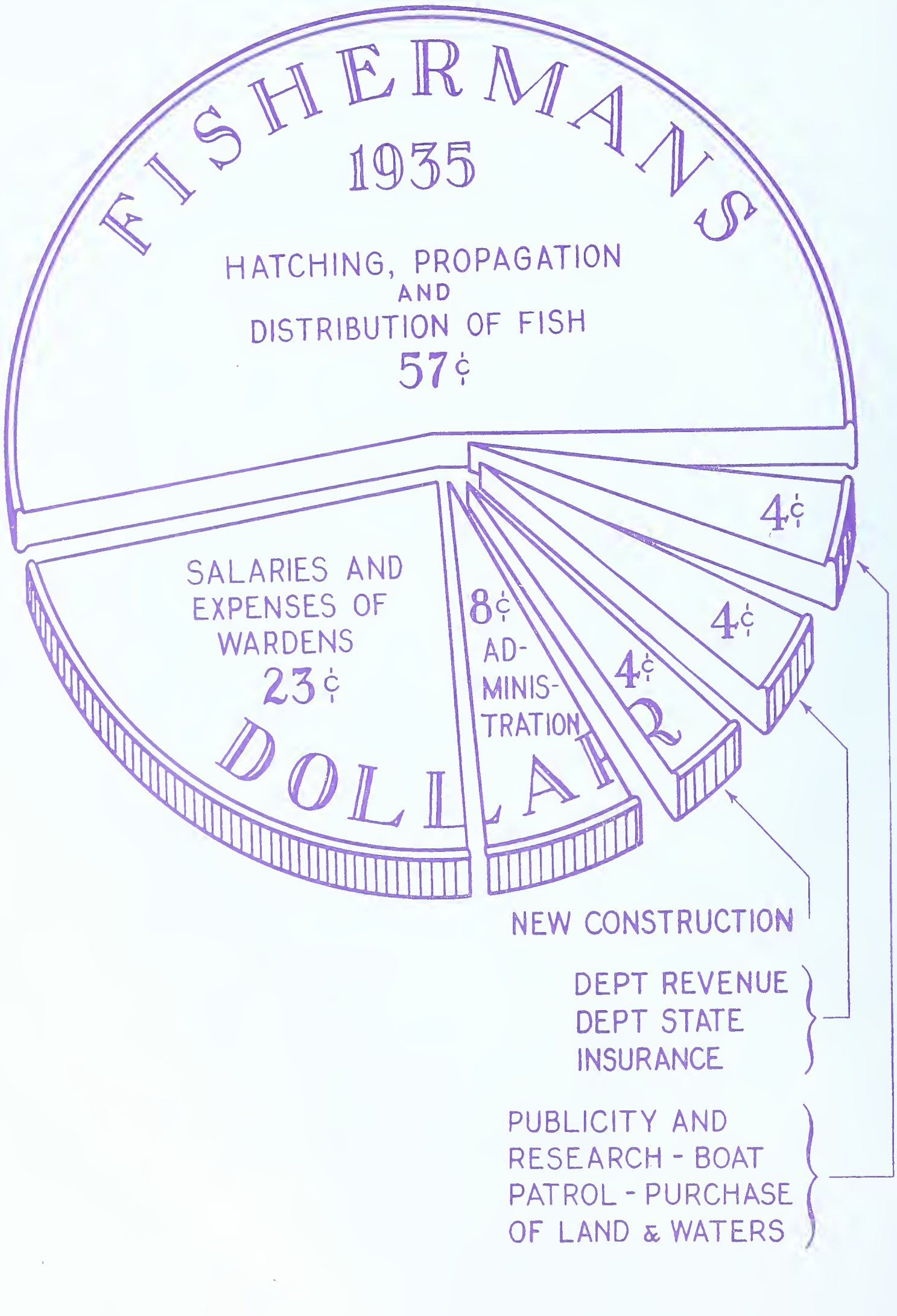
FIND GIANT TROUT NEAR LOCK HAVEN

There are plenty of tackle-busting brown trout in Fishing Creek, Clinton County. Just three years ago, the record Pennsylvania brownie, a fish measuring over 27 inches in length and weighing, dressed, 9 pounds, 1 ounce. was taken from below the axe factory dam near Mill Hall by Harry McClintic of Mill Hall.

That plenty of other trout are to be found in this immediate vicinity on the famous Clinton County stream is evidenced by a report that has just reached the ANGLER. According to Randolph Thompson, Game Commission lecturer, a brown trout, slightly over 27 inches in length and weighing 8 pounds, was found dead recently at the axe factory dam. When discovered, it was lodged against a screen at the dam. The cause of death could not be determined.

Displayed at the Bartholomew Sporting Goods Store in Lock Haven, the big fish aroused a great deal of comment.

Practical Trout Stream Improvement Devices, Particularly for Pennsylvania Mountain Waters, Brush and Log Dams



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NOTE

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PENNSYLVANIA ANGLER welcomes contributions and photos of catches from its readers. Proper credit will be given to contributors.

All contributions returned if accompanied by first class postage.

IMPORTANT—The Editor should be notified immediately of change in subscriber's address. Please give both old and new addresses

Governor Earle Casting the Dry Fly. Commissioner Deibler at the right.

A Message to Pennsylvania Anglers From Governor GEORGE H. EARLE

On the eve of the 1936 trout season, I share with you many happy thoughts. Some are memories of days astream on our mountain and meadow trout waters; others concern plans for that "up at daybreak" trip on opening day of the season. There is real joy for the angler, even before the season opens. Checking tackle, replacing favorite flies of patterns that proved so effective last year, and, perhaps best of all, picturing in the mind's eye the glint of a trout rising to your pet feathered lure.

As we plan for the coming trout season, why not look ahead to the improvement in trout fishing conditions, improvement in which each of us can play an important part? With over one quarter of a million licensed fishermen, Pennsylvania must base any lasting betterment in fishing conditions on the cooperation of her sportsmen.

This year, let us resolve to return all trout under legal size gently to the water. Let us resolve not to fish the small feeder brooks, nature's incubators in which small trout develop to larger size before dropping into heavier water. Let us resolve to exterminate watersnakes so destructive to trout and other fish life at every opportunity; to do our part in improving stream conditions under which these beautiful game fish must live; to be good sportsmen while astream, setting an example for others to follow. Finally, and most important, let us take no more trout than we need for our family, take a sportsman's creel.

May you enjoy, to the greatest possible extent, every soul-satisfying moment on our splendid trout streams this year. The future of our sport rests in large part with each of us.

If You Don't Have a Boy of Your Own, Borrow One!

By OLIVER M. DEIBLER
Commissioner of Fisheries

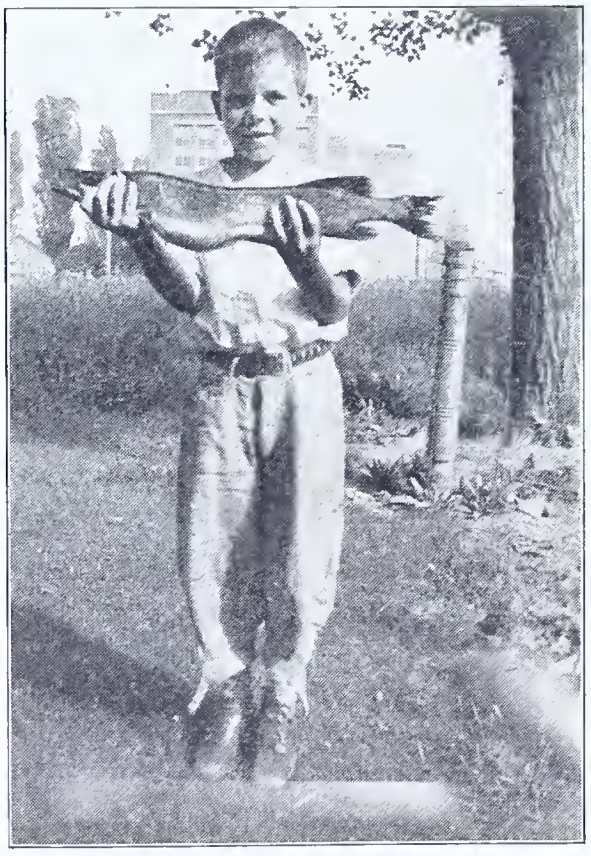
Charles Wagner, of Bellefonte, never finds it too much trouble to take Charles, Jr., fishing. You can bet Junior will never be an outlaw.

AS a boy I was very fortunate in having some wonderful experiences that have stood out quite boldly throughout all my life. As I have seen thousands of fishermen on streams during my life time and few of them accompanied by their own boys, by some other boy who might enjoy the great outdoors, but who unfortunately had no father of his own, or one who was not interested in the greatest of all outdoor recreations—fishing, this thought occurred to me. It has always been a most perplexing problem as to how men, who enjoy going astream in pursuit of their favorite sport, usually take some other man, or group of friends, with them and leave behind the boy who should, and no doubt would, rather be in the company of his father than with anyone else.

Many a boy who has asked his father to take him on a fishing trip has been told that he could not be bothered with him this time, or was given some other excuse, which had no reason in it as far as the boy was concerned. This, to my way of thinking, is a very sad mistake, as I have on many occasions noticed where parents refused to be bothered with their children (it should never be a bother, but a pleasure) have in later years had cause to do much worrying, simply because they did not wish to be bothered with the boy, when they should have been making him their everlasting pal.

Through many years of close association with thousands of boys, both as a teacher in school, and later in other lines of boy work, I have repeatedly asked groups of boys the question—who in their minds was the greatest man they ever knew? Sad to relate that only a few promptly replied, "My father," whereas had there been the proper understanding and relationship between parent and son in each case, such as can only come through close personal companionship, everyone would have immediately claimed his father as the greatest of all men. Therefore, if we fathers and sportsmen are conducting ourselves when on our streams in such a manner as we would wish, not only for our own boys, but others who may be looking up to us for a standard to follow, then the obligation of teaching them the rules of good sportsmanship by practical demonstration rests all the more heavily upon us. The problem resolves itself then into a very personal one. Do we want our boys to be the kind of men we are, or would we prefer that they learn the rules of life and good sportsmanship from others? In some cases the boy might be very fortunate if he chose to follow someone else than his own father, but in the great majority of cases the chances are that he would be thrown into the wrong kind of companionship, which would have a damaging influence on him for the balance of his life.

Dads, wouldn't you much sooner have your sons out on a stream like this, than in some back alley?



Richard Hall, of Northampton, is a happy boy, just back from a fishing trip with his Dad

If I may be pardoned for doing so, I shall refer to my personal experiences, out of which I am largely writing, to relate some of the greatest joys I have ever had. These occurred in my very early boyhood since I was fortunate in having a father who loved the outdoors and in his limited way was a keen student of nature, and who would also rather have one of his children with him, than anyone else. While yet too young to be taken on hunting and fishing trips, I can well remember how he took an older sister, who was then possibly not over seven or eight years old and who now, more than fifty years later, still loves the great out-doors and is keenly interested in the things she learned about on these trips with her father. While I was yet too small to own a gun or fishing outfit, father would take me with him, and on more than one occasion was it necessary for him to bring me home on his back, when the tired little feet could not longer stand the going. Never was it necessary for a second call to get up long before daylight when such a trip had been arranged the evening before. How vividly are those pictures still before me after almost fifty years, and with little

Dr. Fred Seidel of Hazleton enjoys fishing with son, Danny

This little Miss is "all interest" in trout fishing

effort could I write volumes on these experiences.

When it was possible for me to enjoy one of these trips with my father, either hunting or fishing, no companion, group of playmates, or anything else, would have been as desirable, or would have been permitted to interfere in any way with the keen pleasure I always derived from the companionship of a father who was interested in not only my pleasures, but was also interested that I should learn from the proper sources the things that I, as well as any other boy, should know. After these many years, seldom is there a day that I am on the stream, or in the woods, that something does not present itself that recalls to me those very pleasant memories, and the things my father told me in early life.

I apologize for these personal references but I am sure that countless thousands of other boys have had the same pleasant experiences and are still enjoying these most wonderful memories. It is for this reason, therefore, that I am appealing to you men, who, no doubt, are already beginning to feel the urge that creeps over us at this time of the year in warning us that spring will soon be here, and "it wont be long now," until we will be thrilled with that wonderful experience and feeling that flashes up your arm when you feel that old familiar tug at the end of the line. Let us, therefore, *Resolve*

That this spring we are going to make companion pals out of our boys and girls, and if so unfortunate as not to have one of our own, let us, for God's sake, borrow some unfortunate boy in the neighborhood and take him. Don't let us be selfish in this matter and feel that to take some boy with us is a bother, but rather let us look on it as an opportunity and a pleasure, for no man, however great he may imagine himself to be, can erect for himself a more honorable or enduring monument than to have a man in after-life be able to say he is a better sportsman, and likewise a better citizen, because as a boy he was shown the better way by some one of us.

No sounder investment can be made, nor one that will yield greater returns, than for us to avail ourselves of every opportunity whereby our future manhood and citizenship can be improved and lifted to a higher standard. Our sincere wish is to see many more boys accompanied by their fathers, and many more men who may not have a boy of their own, but are willing to borrow one for the occasion, on our streams and lakes this coming season.

C. A. Schmoll, 83 years old, of Lancaster, takes keen delight in seeing that his grandson, Bobby Martz, gets the right start

If we are then interested in a higher type of sportsmen which likewise means a better citizenship, and in the conservation of our most valuable and important asset, namely our Youth, we must face the facts. Whether we realize the desires and wishes of our boys, all depends on how we answer the following questions.

First of all, do we really want our boys to be the kind of sportsmen we are, or do we want them to be the kind we pay our wardens to look after.

Shall we be their companions and pals, or shall their company be of their own choosing?

Do we want our boys to speak our language, or shall it be that which is gathered on the streets?

Are we interested enough to see that these boys shall be taught the value of the Great Outdoors in its every aspect as compared to what the average boy of the street learns in the back alleys? We have been preaching and teaching conservation of the material things for lo, these many years, but let us now give a little more attention to the conservation of our greatest asset, the youth of our country. Gentlemen, this most important problem is staring you and me squarely in the face. It's up to us!

Suggestions and Reminiscences on Fly Fishing for Trout

By CHAS. M. WETZEL

WHEN the editor requested me to put in writing some of my observations on trout fishing, together with suggestions for fishing rough, mountain streams — I realized I was in for a difficult task.

One of the obstacles to fishing such waters is the brush and trees lining the banks, which will not permit using the ordinary overhead or horizontal side casts.

Refer to Figure 1, and assume that the fly is lying on the surface of the water at the point "A". How it was cast that distance with brush and trees lining the bank, we shall soon determine. For clearness, I have omitted the fly caster who is holding the rod at the angle designated as the first position.

With the right hand slowly raise the rod towards the vertical, meanwhile stripping in line which should be held in large coils in the left hand. Continue this retrieving until the second position is reached, when the line will be more or less taut. The fly will now have traveled over the water to the spot marked "B".

Now with the right hand, bring the rod sharply downwards, slightly below the horizontal, meanwhile "shooting" the coils of loose line held in the left hand. During this movement the fly will describe a curve in the air and alight at the desired point "C".

This cast is of the utmost importance in fishing brushy streams and is applicable to any type of fishing. Until one has mastered its technique, he will experience difficulty in keeping the dry fly afloat; but like anything else, after a little practice it can be readily accomplished.

Ordinarily the cast is started by pulling line off the reel until a full length is reached, slightly longer than the rod. Cast the fly a short distance out on the water, again stripping line off the reel to be held in coils in the left hand. Shoot the line when the rod is traveling from the second to the third position. If greater distance is required, retrieve the fly a short distance and repeat the procedure described above.

As I mentioned in last month's article, the utmost caution should be exercised in approaching a trout pool. Nothing is so inimical to success as disregarding this important point. Be careful about disturbing the bushes bordering the creek and when entering the stream, wade in front of trees and brush higher than your head. Note the position of the sun and by all means avoid having your shadow show on the water.

Wide shallow water may he entered boldly but without splashing, while deep narrow water should be fished from as great a distance as possible. Fish the near water first, then far off, so as not to alarm the fish, which when disturbed usually flee to deep water. The tails of pools are good spots when there is no glare from the sun and at such places I usually start fishing.

Trout lie where their larger brethren permit and usually in a spot where little exertion is required to stem the flow of the stream. Just at the edge of the swift water is a favorite lurking place, for here the fish is in close proximity to any food that may be carried down by the current. Shady water is good and by far the majority of trout are caught in such places. Deep water that is not shaded can be passed by, for few fish are to be found lurking in its depths.

Trout rarely remain long at the head of swift water, nor do they occupy the center of whirlpools, unless an extremely heavy hatch of flies are on the water, when they are liable to be cruising anywhere. The latter spot is one of the most difficult in fishing, for the vagaries of the current are such that the angler is liable to be seen in almost any position he takes up. In such a place, (where the current circles lazily) it is a difficult matter to ascertain the position of the fish. One thing we can depend upon, they are always facing the current. Whether North, East, South or West or seemingly downstream.

Diagram I illustrates a spot typical of many trout streams. We will let the dotted lines represent the path of the fly fishes as he moves from casting positions x to x1, x2, etc. The angler proceeding up stream was struck with the distinctive features of this forked creek and has formulated a plan of campaign. Let us follow him to see if he catches a trout.

Due to the brush and trees, the position x offers the best solution for beginning the attack, so the angler makes the casts numbered 1, 2, 3 and 4 in their respective orders. Trout are lying close to the edge of the swift water, yet for some unknown reason they refuse the fly.

He next turns about, facing the whirlpool, and makes the casts 5, 6, 7 and 8. At the ninth cast a trout rises to the fly and fortunately is safely creeled. The commotion attending the landing of the fish has more or less alarmed the others, so the angler rests the pool for a few minutes. The second attempt proves a failure so he crosses the stream and camouflaged by the brush continues to the position designated as xi.

This is rather a difficult place to fish, especially with so many trees at his back; but he resorts to the method illustrated in Figure 1 and on the fifth, or cast numbered 14, another trout is creeled.

He now proceeds inland and continues upstream quite a distance where he crosses the main creek; then retraces his steps to the intriguing whirlpool, where a large foam patch monotonously circles on its surface. Here casts 15, 16, 17, 18, 19 and 20 are made, but the trout have not yet recovered their equanimity and refuse to strike.

Turning around, he makes four more casts diagonally upstream, numbers 21, 22, 23 and 24—the final one yielding another good sized fish.

Assuming that the angler, well content with his three nice trout, has quit fishing, we will now devote a few paragraphs to a pool where the results proved not so successful.

Diagram 2 illustrates a sketch of a pool at the Devil's Elbow, where an immense brown trout holds sway. During the midday glare of the sun, he retires to seclusion among the gnarled roots on an old white pine stump; but in early morning and late evening he forsakes this lair and takes up a position below a large submerged rock near the upper end of the pool. Here, close to the edge of the swift water he lies in wait for the large mayflies (commonly called the shad flies) that come riding down on the current. His cruising range is very narrow and this particular trout has caused me more concern than any fish I have yet encountered.

Facing upstream, the mountain rises sharply from the left bank, while the right hand side is completely covered with an insuperable twisted mass of green briar and rhododendron.

When I first located the hideout of this fish—beneath the white pine stump—it was a rather perplexing problem as to just what position would be the most advantageous for attacking him. Feeling the center of the pool offered the best solution, I accordingly cut out a path through the rhododendron to the water's edge; but I was mistaken, for late that evening when the shad fly was whirling in ceaseless activity over the water, the trout started rising below the rock in what I later learned was his accustomed foraging ground.

An examination of the sketch will suffice to show that my position was such that drag would inevitably occur; for even to cast a hook in such narrow confines was absolutely impossible. However from the position x, the casts 1, 2, 3, 4 and 5 were made and I had the thrill of seeing the old cannibal (slightly beneath the surface) follow my fly almost down to the log that spans the pool.

The following morning, I crossed the creek at the lower end of the pool and began a cautious advance upstream along the left hand bank. Keeping as close to the water's edge as the steep mountainside would allow, I finally reached the position x1.

This undoubtedly was a most strategic spot, for it enabled me to cast over the trout with a minimum of drag. Accordingly from this position I made the casts numbered 6, 7 and 8, while on the ninth cast, the trout came up and took the fly.

To make the story complete, I should here, like to record the capture of this fish, but so far I have never landed him. Judging from the well beaten path that I originally cut through the briar and rhododendron to the water's edge, this pool is now regularly fished by all anglers along the stream. No doubt others have discovered the position is a poor one, for on my last trip, I was gladdened by the sight of the old cannibal, as usual, rising lustily in his old stamping ground below the rock.

I might add that the moral in this story

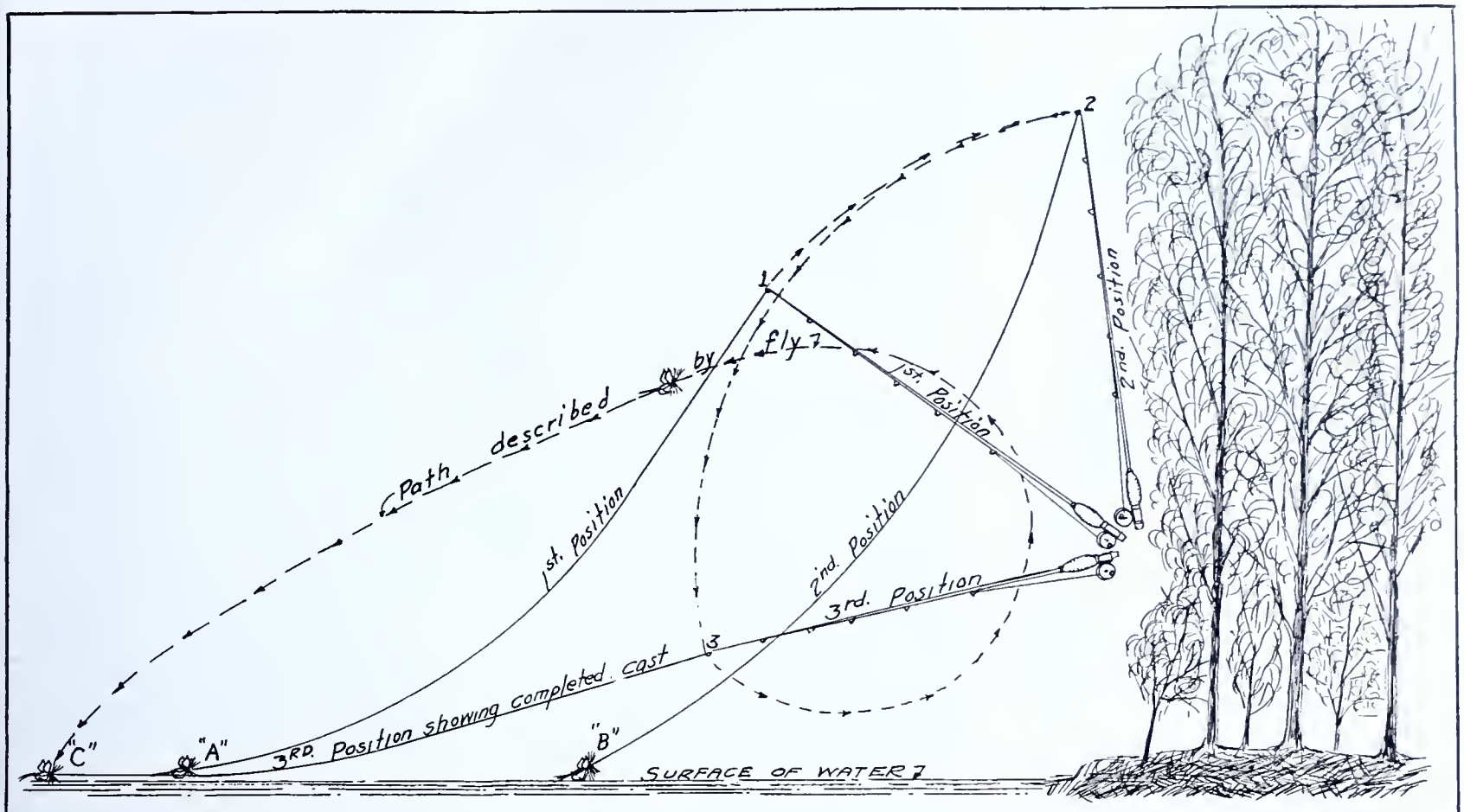


FIGURE 1

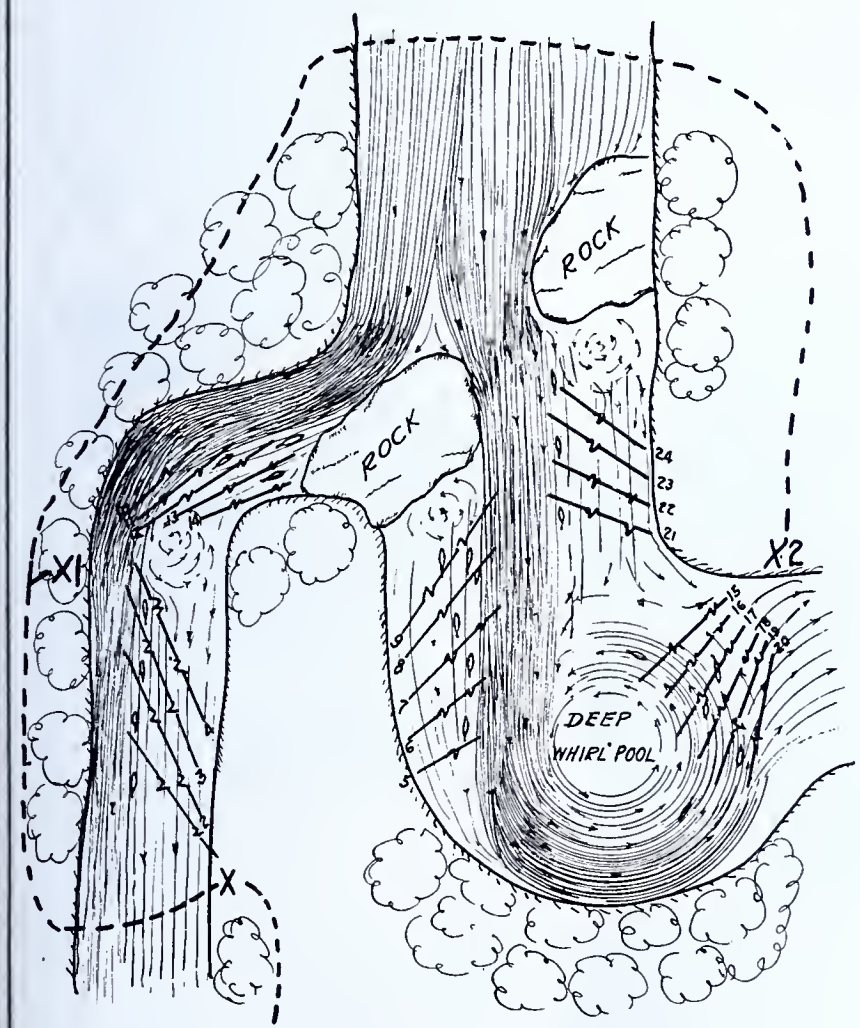


DIAGRAM 1

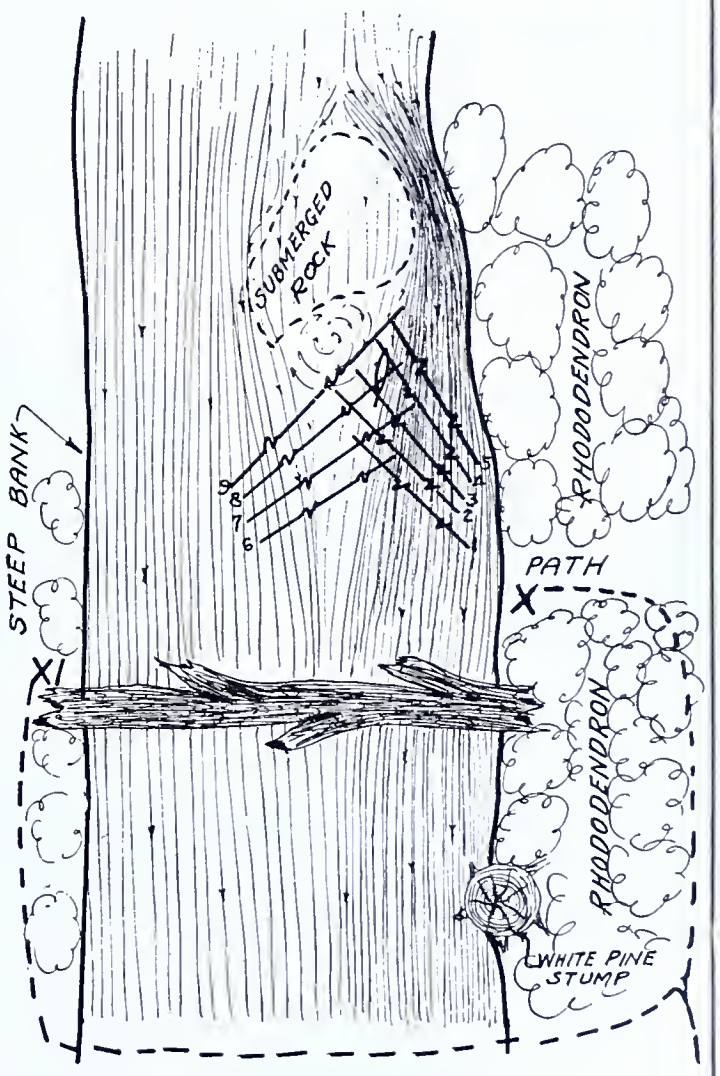


DIAGRAM 2

Witzel 2-36

is, "don't always fish well beaten paths," excepting, of course (should you chance to encounter it) the one leading to the pool at the Devil's Elbow.

During the summers of 1917, 1918 and 1919, it was my good fortune to be located on Kettle Creek—one of the finest trout fishing streams in the State. Naturally during the summer the main diversion of the natives was fishing; and among the "Kettle Creekers" (as they still styled themselves) were numbered some of the finest anglers in the country.

There was Rube Kelly, undisputed champion fly fisher of the creek, whose ability to "flick 'em out" of the most unlikely looking places was the awe and admiration of all the city fishermen; and Rube's close friend and rival John Van Horn, owner of the Trout Run Hotel—in which I passed so many pleasant days learning much of fish lore from its kindly proprietor—a master of the art.

John only fished in the evening—it was a ritual with him. Late in the afternoon as the sun was dipping below the mountains, John would say to the city fisherman lounging around the bar: "Boys, I'm locking up shop now to go fishing until dark. Rube Kelly'll be along a little later and I don't want him to think he's the only fly fisher hereabouts."

Then John would walk down to the creek, always returning at dark with a few nice trout. Probably by that time Rube would appear with a basket bulging with fish. How the city anglers who had fished unsuccessfully all day would crowd around!

"Where did you get 'em Rube? What fly did you catch them on?"

Rube would give some unintelligible reply whether it was the Hammersley, Trout Run, Beaver Dam or the "Canadian Hole" on the Kettle Creek—one could never quite catch the name. Then he would get out his fly book, leaf it over page by page and finally select a fly which would be eagerly passed around.

"What is it? Has it a prototype?" And a thousand and one other questions.

Everyone was then seized with the fishing fever which settled over the crowd like a plague.

Fly books would be produced to see if a similar artificial could be located; leaders would be put in soak for the morning; rods would be passed around and their respective merits compared; the speckled trout with their gleaming blood red spots would again be duly admired. Everyone would be talking fishing.

"Rube's the only man on the creek that can catch trout," solemnly proclaimed a city inebriate and a follower of Izaak Walton's dissolute disciple, Charles Cotton.

"He's a good man with the fly," conceded John, "maybe you noticed that he don't use a surf rod to catch trout," pointing an accusing finger to the corner of the room where an expensive salt water rod reposed.

"Very true, John," agreed the unruffled inebriate, "yet you got to hand it to me for catching the largest brook trout yesterday." And then with a sorrowful shake of the head he continued: "And just to think, I cut it up for bait like a moss bunker, thinking it was just a baby."

And so it would continue—far into the night. In short, John Van Horn's hotel was a trout fisherman's rendezvous. For miles up and down the creek the old timers in their caulked Wisconsin shoes gathered here each evening to swap fishing stories and reminisce over the logging days and the town of Cross Forks—now only a shadow of its former riproaring days when the screeching of fiddles, the curses of lumberjacks and the splintering crash of whiskey glasses, echoed mightily from the doors of its numerous saloons.

Halcyon days were those spent on Kettle Creek. Brown trout and the dry fly at that time were both more or less unknown to its waters. From the point where the streams of Bitumen dumped their yellow mine refuse into the creek, up to the tiny rivulets of its headwaters — the speckled trout held complete sway.

As I mentioned before all the natives were expert fly fishermen, the Summersons, the Wykoffs, Ira Weede, Fred Crane and a host of others. I could go on indefinitely recounting fishing experiences on this famous stream, but in conclusion I will content myself with saying, "If you have never fished Kettle Creek, you have missed fishing one of the most delightful and fascinating streams in our state."

Taller Than Tall—This Snake Yarn

When H. M. Turrell, Deputy Secretary of Agriculture, sent us the following clipping concerning a watersnake, we were forced to concede that a new record in tall stories had been established. Lest we lose the full import of this snake epic, we are printing it verbatim. Read on, brother anglers, concerning a watersnake with groundhog tendencies:

"Harry C. Stockholm of Susquehanna, killed a mammoth watersnake in Tunkhannock Creek near Cameron Corners south of South Gibson, Tuesday. The snake had risen from the water, and was looking things over when Mr. Stockholm went into action. The reptile was killed and brought to Susquehanna where many people viewed the carcass. Watersnakes live on small fish, and while they are seldom seen in winter, this reptile was fishing among the ice cakes dotting Tunkhannock Creek when death overtook him.

"The creek which rises at North Jackson is frozen solid except where the water is very swift. It was at one of these points that Mr. Stockholm made the kill. Mr. Stockholm says he will no longer doubt The Susquehanna Transcript report of seven rattlesnakes coming to grief while fishing through the ice at Melrose one cold day a few days ago. The rattlers were fishing through air holes; all had caught trout, but the below zero weather closed the ice about their necks, and they were unable to withdraw in time to escape death. All seven snakes had trout hooked on their poison fangs when the carcasses were recovered."

WALTON CONVENTION DATES ANNOUNCED

The fourteenth annual convention of the Izaak Walton League of America will be held in the Hotel Sherman, Chicago, April 16, 17, and 18, 1936.

The highlights of the meeting will include discussions of means of controlling stream pollution, with particular emphasis on the Water Pollution Bill, recently introduced in Congress by Senator Augustine Lonergan, of Connecticut, which coordinates and strengthens pollution control by local, state and national agencies.

Another important question is adequate recognition of wildlife as a natural resource on the public domain lands of the West. Attention will be given to means of strengthening the support to wildlife conservation thru the General Wildlife Federation as inaugurated at the recent North American Wildlife Conference.

A Call to Arms!

NEXT to pure air, pure water is the most vital necessity of all life. The present revolting condition of Pennsylvania waters, our most important controllable natural asset, is well recognized.

Year after year, conservation forces have sponsored State legislation which would make it possible to correct the grossly polluted condition of our rivers, yet every year the polluters have effectually blocked any progress with the argument that "With the adoption of such legislation, Pennsylvania industry will be placed at an unfair competitive disadvantage with that of states not having such laws"—Whatever the merit of this argument may be, it has been effectual in blocking any progress towards an orderly plan for stream purification.

The answer is evident. The problem must be attacked from a National angle. Watercourses are by their very nature, interstate, and can not be confined within man-made political boundaries. The Interstate Commerce Commission regulates transportation on rail and water, yet the water itself is permitted to flow from state to state, carrying its ever increasing cargo of pollution on which the lower communities and industries pay all the freight.

Congress has awakened to the situation. Senator Augustine Lonergan, of Connecticut, has introduced a bill (S.3958) which, if enacted, will lay the foundation for orderly progress in stream purification on a National scale. The Bill is not the result of snap judgment, but of years of study. Included in its provisions are permanent establishment of an enlarged National Resources Committee whose duty it would be to administer the Lonergan Water Pollution Act. The Bill provides for establishment of sanitary water districts which will function on interstate watersheds. Provision is made for investigation, experimentation, state cooperation, loans and grants, and enforcement of rules adopted by the various districts. Because of the uniformity of its provisions, the Bill effectually answers previous objections to state pollution laws. It should be enacted. The National Resources Committee recently stated "It is needed to bring about a public realization of the fact that clean streams represent an economic value to the community which would more than offset the cost of the necessary treatment works."

Indications are that the Lonergan Bill has an excellent chance of passing the Senate, where the Bill now reposes in the Committee on Commerce. Senator Guffey is a member of this Committee. Write him your approval of S. 3958. which has been endorsed by practically every conservation organization in the land, and ask as many of your friends as possible to do likewise. A companion bill, S. 3959, amends the Deposit of Refuse Act and the Oil Pollution Act to make them conform to the new legislation. When you write your Senator, also endorse S. 3959. Also write Senator Davis along similar lines, and after these bills pass the Senate, put your Representative in the House on the spot.

This is the chance of a lifetime. It's up to the proponents of this legislation to make such a demand that it can not be denied.

Mr. Sportsman: Let's get a broad cross-section of opinion on this. Try to get the endorsement of your women's clubs, civic clubs, etc.

C. C. C. Camp Workers Did a Fine Job of Stream Improvement Last Year. Here are Some Boulder Deflectors Placed on Six Mile Run, Centre County

Dear Mr. Editer

I figger mebbe now thet Seth hes tole you thet he's a turnin over writin' fer yer paper ter me fer a while, I'll be havin' my hands full. Ennyhow, you an' Seth an' me hes fished tergether fer nigh onto fifteen year now an' since we all looks at things the same way, there ain't a-gonner be enny trouble on thet score.

You never seed sech a itchy bunch o' fellers in yer life as the gang at the store these days. Most o' the boys like fishin' fer trout an' with our sucker water hereabout froze up tight this winter they wasn't able ter ease off the fishin' bug. They done some tarnal good winter game feedin' an' we figger mebbe we pulled through a fair bunch o' quail, turkey an' mountain pheasants. Enny feller that likes ter fish an' hunt hed no business a-sittin' in the past two months.

Now then, about the trout fishin'. Seth an' me helped put out some powerful nice brookies jest last fall. The water's up fair high an' what with the thaw a-settin' in, them trout oughter jest have a good time a-feedin' afore openin' day. Reckon I ain't never seed our mountain cricks in better trim. Seth he's found him a hole 'bout a mile above his place thet has a whoppin' big speckled trout in it. He ain't sayin' if it's bigger then the one he ketched last year, but we figger the ol' feller is nigh onto sixteen inches an' plenty hefty.

He's a cute un, thet trout. The hole he's in is right at a sharp turn in the crick, washed out under a jam o' logs an' brush. We figger thet the first turn he'll make ef he feels a hook is fer under that brush an' then jest watch out fer tackle. Seth figgers on bein' at the hole at daybreak openin' day. He allus fishes red worms, and right there him an' me starts argyin'. Jest give me some ole rotten pine logs whar I kin git some good pine sawyers an' thet's all the bait I'm a wantin' early in the season. Them worms is white and tough an' sort o' pointed at each end. It's mighty hard fer one o' our mountain trout ter turn one down, I'm a-sayin' White grubs we find in sawdust piles is good, too, but they're so everlastin' soft thet they're tore off the hook first thing you know.

I'll be a signin' off now fer there's some sucker fishin' a-waitin'.

Pennsylvania Trout

Comments Concerning Their Habits, Markings and Characteristics

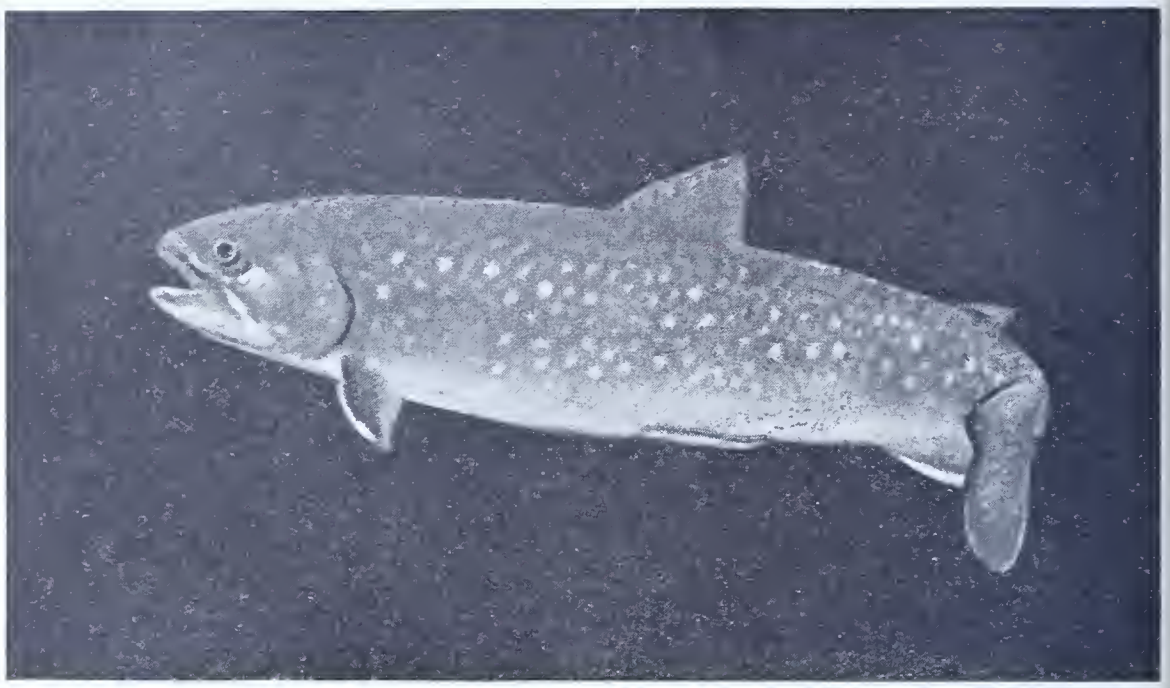
By The Editor

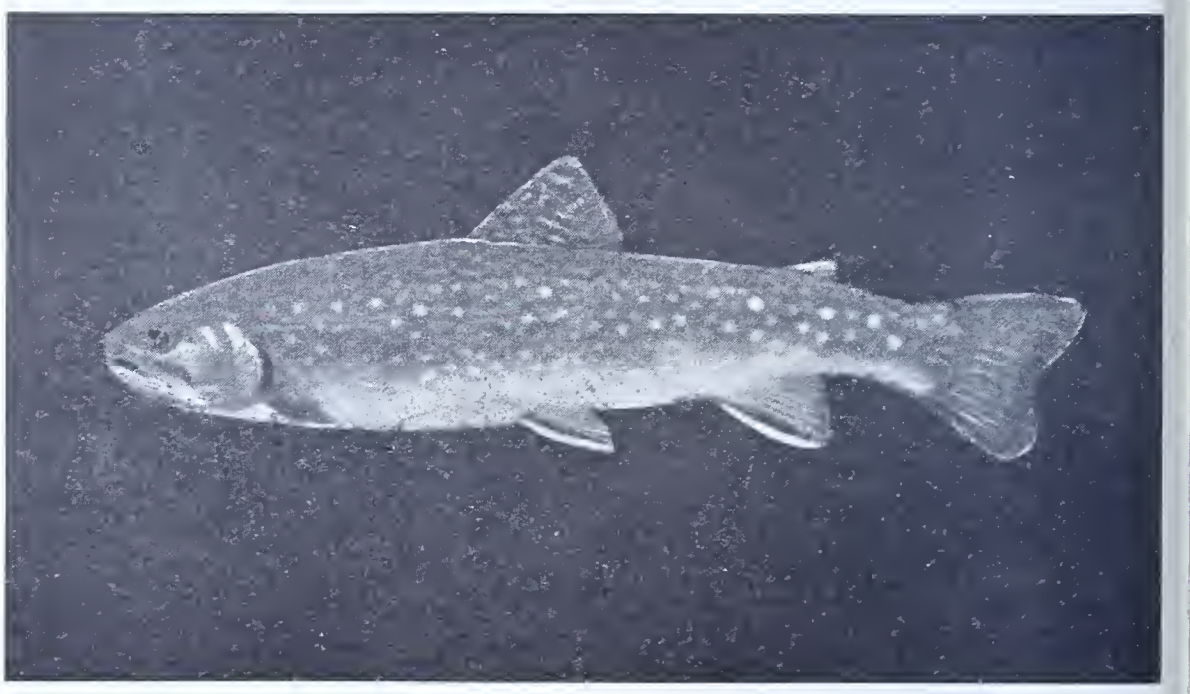
TO MANY of our present day trout fishermen, the eastern brook trout or charr occupies a cherished niche in memory. Not in brilliant hues, graceful form, sterling game qualities or, for that matter, in its environment, picturesque mountain and meadow streams, has the brook trout achieved this ranking. Your average trout fisherman who invaded the haunts of the speckled clan twenty-five years ago, in all probability carefully placed as his first trout, a brook trout, in the creel. At least, under the law of averages, this should have occurred, for while the brown trout in some streams was increasing in number, the native charr still predominated in most waters.

That first brookie is indeed a cherished memory. Remember the laurel and fern banked shore, the swift, ice-cold current of a mountain stream, in a setting of laurels and pines, surging into a brush choked pool? How, on your first cast, after a low-crouching, careful approach, there came a strong tug at the line, then two or three subsequent sharp tugs. And the swirl of your first trout on the surface near shore just before the capture? Possibly it was not over eight inches in length, an average adult charr for this mountain stream, but in vivid coloration, in symmetry of shape, Pennsylvania waters could offer you no prize its equal. Now that your first brookie has been taken, and while you are, perhaps, gathering some fern at the side of the stream, moistening it and placing it at the bottom of the creel, the better to care for your catch, let us glance more carefully at this denizen of the brawling mountain brook.

In Salvelinus Fontinalis, the charr, nature has combined two rare qualities, extreme beauty and delicacy of flavor. The firm flesh of this charr will probably be pink in color, readily noticeable when it is dressed. But it is in outward appearances, since the intent of this article is to enable our fishermen to detect characteristics of our three species of trout, that we are particularly interested.

The predominant shading of your catch tends to dark hues. Shadows prevailed in the pool that was its home, hence the camouflage of dark coloration. It is a graceful fish, tending to slenderness; head of prominent size, jaws of medium length, a trifle hooked at the tips, large eyes set well forward in the head, slightly in front of the base of the mouth. Minute scales, beneath a mucous layer, cover its body. Its coloration, however, is the feature that arrests our attention. Head, back and sides of the body, the dorsal or back fin, a fleshy projection behind the dorsal fin known as the adipose fin, and caudal or tail fin are basically dark gray in color; strikingly mottled with deep rich green are the head, gills, sides, back, dorsal fin and adipose fin. Along the middle of the sides are a number of crimson spots. The ventral surface or belly of this mountain trout is tinged a red almost as dark as that of the spots. Its lower





Brook Trout or Charr

fins, the pectorals immediately behind the base of the gills, the ventral fins, situated at a point a trifle back of the center of the belly, and the anal fin, just to the rear of the vent, are colored a crimson orange, bordered on the forward margins by a black streak verging to white on the edges.

Fontinalis the brook trout, however, exhibits a wide variation in markings under varying conditions of sex, size, age, and locality. The parr markings, about eight in number in the charr, are always to be observed in young trout. They are large, vertical dark blotches or bars extending from the dorsal surface down the sides. The following guide to brook trout coloration and characteristics is offered:

Slender, light colored and silvery in lakes, ponds and swift streams that are clear and sandy, or in parts of other bodies of water where such conditions obtain. Stout and dark colored in lakes or ponds or localities of lakes or ponds having muddy bottom and considerable vegetable growth and particularly water discolored by vegetable stain. The same may be said of streams, and it should be added that the swifter the flow of water where the trout occurs the more slender it is likely to be.

In successfully fishing for the brook trout, first hand knowledge of its habits and environment is essential. During the early part of the season, much of its food is taken from beneath the surface. Insect larva, (imitated by artificial nymphs and to some extent by sparsely tied wet flies) earthworms, crustacea such as the crayfish, and in the instance of large brookies, min-

Rainbow Trout

nows, constitute much of its forage in April. Streamer flies and bucktails fished fairly deep are often effective at this time. Generally, streams are then high and a great deal of natural food is washed from the stream banks. Later, when hatches of flies appear on the water, it rises readily to the dry artificial.

A study of stream characteristics in relation to the habits of this native charr is usually advisable. Where natural shelter is available, (sunken logs, cut-under banks or boulders for instance,) it is a safe bet there will be one good-size brookie, probably three or four. Long, open stretches of water will frequently be found to contain few trout. If, however, you come to a deep pool, virtually screened in by overhanging brush and difficult to fish, expect a brookie of good length and girth. Man is but one of the enemies with which this timid and beautiful fish must contend, and good cover it must have in order to survive.

The Brown Trout

The first brown trout that nestled in an angler's creel is certain to have left vivid memories. If it was taken on a natural lure, an angleworm, for instance, he may recall a sharp strike and then the swift movement of the line through the water as the fish lunged toward some root, snag or other shelter. Possibly it was taken on a minnow, spinning behind a swivel. Probably more big brown trout are caught by this method each year than by any other. Of the three species of trout to be found in Pennsylvania, the introduced brown holds first rank as a predator on minnows and other forage fishes common to its environment. A clever minnow fisherman often will aid the trout population of any stream by taking these big brown trout, many of them from 18 to 24 inches in length. There is a great deal to be admired in the English system of classifying brown trout over 16 or 17 inches in length as poor fly fish detrimental to the welfare of a stream and, through carefully planned bait fishing, thinning down the number of these brown cannibals.

Let us assume that a big brown trout has struck the minnow. Its actions following the strike are suggestive of the antics of our native pickerel. As it rose leisurely to the lure it gave the impression of a black and golden shadow, poising for a brief instant before settling again to the bottom of the stream. For possibly two minutes, the only indication that a fish has struck may be a few twitches on the line as elongated jaws turn the lure for swallowing. But, at the first jab of the hook, or we should say double hook, three or four pounds of trout dynamite tests skill and tackle.

Make no mistake about it, however; brown trout until they achieve a length of 17 or 18 inches are to be classified with the cream of fly fish. Moody in their surface feeding splurges they may be, unaccountable as to time when their rises occur, yet their swift and spectaeular golden surges to the floating dry fly and versatile fighting tactics are sufficient to win the admiration of the most dyed-in-wool dry fly man. The gamey brown trout, Salmo Fario, holds an important place in modern Pennsylvania fishing.

As the brook trout varies in shades of coloration according to environmental characteristics, so does the brown trout. Basically, its body color may range from light golden brown to a brownish black. The head, body, dorsal and adipose fins are marked by numerous black and red spots. Sometimes the black spots are x-shaped and occasionally they have pale borders. In body formation, the brownie is usually short and stout, the greatest depth of the body being contained about four times in the length, discounting the tail or caudal fin. The head is large in an adult specimen, usually equalling about one-fourth of the total length, discounting the caudal fin or tail. In diameter, the eye equals about one-fifth of the length of the head. The jaws are powerful and well formed, the upper jaw extending to the rear margin of the eye. The vomer or front part of the roof of the mouth is triangular in shape and has a series of teeth running crosswise. On the shafts of the bone are two alternating series of strong teeth.

The pectoral or breast, pectoral fins, ventral fins and anal fin are usually yellowish in color.

The Rainbow

Of the introduced fishes to Pennsylvania waters, the rainbow trout is rapidly nearing first rank in popularity with our trout fishermen. A gallant fish, this black spotted trout from the Pacific slope. Perhaps from the fly fisherman's angle, it is about the nearest thing to perfection. To a noticeable extent the rainbow seems reliant upon forms of insect life and is a persistent surface feeder. Its broad girth, closely knit yet graceful body, small head and powerful fins are probably contributing factors to the splendid battle a rainbow makes. There is in its rise a scintillating silver and pale blue suggestive of the foaming water it loves, in its strike, a hard driving lunge that stretches the tapered leader to the tautness of a violin string; in its first mad leap from the surfaee at the feel of the barb, a surging abandon that marks this trout as game fish of the purple.

Our trout fishermen this year should strike

(Please turn to page 12)

Brown Trout

Balanced Tackle in Fly Fishing

By KENNETH A. REID
Member, Board of Fish Commissioners

(Reprinted By Request)

IN ORDER to attain any real success in fly casting, it is essential that the individual items of tackle be properly balanced one with another. One may have the finest individual rod, line, reel, leader and fly that it is possible to procure and yet the assembled outfit may prove utterly hopeless when it comes to casting. Lack of proper appreciation of the necessity for this coordination in the different items of tackle is responsible for more woes of a beginner than any other single factor. Of course, he must also learn the technique of casting, but he must have a reasonably well balanced outfit as a preliminary to learning the art of casting.

As a proper understanding of the functions of the various items of tackle is necessary to their proper selection and use, it will be well to clearly differentiate between a fly casting outfit and a bait casting outfit. In bait casting, the lure has appreciable weight of anywhere from one-half to more than one ounce, and it is this weight that you actually cast and which in turn pulls the line out after it. It is similar to throwing a crabapple with an apple switch. In fly casting, the fly has no appreciable weight and can not of itself be cast. Strictly speaking, you *cast the line*, which in turn carries with it the leader and fly. Naturally, this fly line must have appreciable weight which depending on the rod, will vary for the customary 30 yards from about ¾ of an ounce to an ounce and a half. The weight of this line should be sufficient to cause a decided bend in the rod when it is picked up from the water preparatory to the backcast and 25 feet or more of it is beyond the rod top. Probably the greatest single error in fly fishing is the tendency to use a line that is entirely too light to properly develop the inherent action of the rod.

For trout fly fishing on Pennsylvania waters, a split bamboo fly rod eight feet in length and weighing approximately 3¾ to 4 ounces will be found much pleasanter to cast and just as effective as longer and heavier rods. A level fly casting line will be found more suitable for small stream work and for such a rod a size F would likely be correct. If the rod showed a tendency toward stiffness, it might require the next larger, size E. In dry fly casting on the larger streams, a double tapered line has some advantages in delicacy of handling, and the proper size for this same rod would be an HEH or, in the case of a comparatively stiff and powerful rod, an HDH. A fly casting line is generally spoken of as "enamelled silk" as opposed to the plain braided silk used in bait casting. They are quite different affairs and are in no sense interchangeable.

The reel is probably the least important item in the fly caster's outfit. A single action plain click reel of the conventional narrow spool type with a diameter of three or 3¼ inches is recommended. Usually the spool capacity will accommodate considerable more than your 30 yards of fly casting line, and it will be found advantageous to first wind on the spindle enough linen backing line to build it up to the required diameter so that the spool will be comfortably filled. This will not only keep your line in better condition by reason of the larger diameter of its coils on the reel but will give you greater speed in line recovery. The weight of the reel for the 8 foot rod should be at least 5 ounces but not more than about 6 ounces. The bare reel should weigh from 1¼ to 1½ times as much as the rod. In the case of

Ken Reid Fishing a Western Pennsylvania Trout Stream

FLY LINE COMPARISONS

Make	Size and Length	Weight	Point	Belly	Level Line Pt. to Taper (Feet)	Taper Length (Feet)	Belly Length (Feet)	2nd Taper Length (Feet)	Level Line Pt. To Taper (Feet)	1st Inside Taper Length (Feet)	Running Line (Feet)	2nd Inside Taper Length (Feet)
1. Allcock AI No. 5419	30 Yds.—IEI	½ Oz. 77 Gr.	.023	.035	0	16	58	.....	.....	.....	.....	.....
2. Halford 1FI	30 Yds.—1FI	½ Oz. 76 Gr.	....	....	.....	.....	.....	.....	.....	.....	.....	.....
3. Mills Std. Imp.	30 Yds.—E	½ Oz.106 Gr.	.030	.039	0	13	64	.....	.....	.....	.....	.....
4. Weber	30 Yds.—HEH	.....	.025	.043	1	14	62	.....	.....	.....	.....	.....
5. Halford—Size 3	30 Yds.—HDH	1 Oz. 17 Gr.	.030	.043	0	15	60	.....	.....	.....	.....	.....
6. Mills Intrinsic Transpar. (Cream Color)	30 Yds.—HDH	1 Oz. 0	.025	.0425	0	16	58	.....	.....	.....	.....	.....
7. Gladding Otselic	30 Yds.—HDH	¾ Oz. 9 Gr.	.022	.037	4	7	68	.....	.....	.....	.....	.....
8. Gladding Otselic	30 Yds.—HDH	¾ Oz. 9 Gr.	.022	.038	4	6	70	.....	.....	.....	.....	.....
9. Gladding Otselic	30 Yds.—HDH	¾ Oz. 17 Gr.	.022	.040	4	8	64	9	5	.....	.....	.....
10. Kingfisher De Luxe	30 Yds.—HDH	¾ Oz. 65 Gr.	.027	.040+	5	8	64	.....	.....	.....	.....	.....
11. Jones President	30 Yds.—HDH	1¼ Oz. 35 Gr.	.027	.046+	6	7	60	9	8	.....	.....	.....
12. Shakespeare Tru Art	30 Yds.—HDH	1 Oz. 46 Gr.	....	....	.....	.....	.....	.....	.....	.....	.....	.....
13. King Eider	30 Yds.—HCH	1½ Oz. 5 Gr.	.030	.052	0	16	58	.....	.....	.....	.....	.....
14. Gladding Otselic	30 Yds.—HCH	1½ Oz. 27 Gr.	.022	.047	10	7	57	7	9	.....	.....	.....
15. Ashaway AJ-3 Taper	33 Yds.—HDGDH	¾ Oz. 60 Gr.	.023+	.044—	11	10	12	10	13	6	19-.033	5
16. Crandall—3 Taper	40 Yds.—HCFCH	1¼ Oz. 50 Gr.	.028	.043+	11	7	17	.....	.....	10	30-.033	.....

From the above chart it will be obvious that there is a great need for standardization of line sizes. For instance, one HDH is as light as ¾ ounces 9 grains while another of the same letter designation weighs 1¼ ounces and 35 grains. The actual weight is the important factor in line balance, and it is a wise safeguard in the case of an unknown line to check its weight on an apothecary's scales rather than rely merely on the letter designation.

The last two lines listed are the quick taper or triple taper type which have a short belly and a long running line as an aid to distance casting. In general, these lines should be one letter size larger in the belly to correspond with the conventional double tapered line;—that is, if an HDH double tapered line fits your rod, the corresponding triple tapered line would have a C belly.

a fly rod where the reel is set behind the hand grasp, the weight of the reel actually makes the rod feel lighter by tending to balance it in the hand and relieves it of the feeling of end or tip heaviness. With the proper weight reel on the rod, the assembled outfit should balance at a point about two or three inches in front of the grip.

The leader is also an important item and unless it is chosen with consideration for the size of the line, the caster will experience difficulty in getting the leader to extend itself straight out from the line. The great majority of commercially tied dry fly leaders are too light on the butt or heavy end to cast properly. The tapered point of a fly line will calibrate .030 and sometimes, particularly on English lines, .025. With a tapered dry fly leader with a butt end measuring only .010 or .011, the step down in size between the line and leader is too abrupt and the leader is likely to fall in a bunch of wavy coils instead of extending in a straight line beyond the end of the line. Particularly in leaders of 8 feet or more in length, casting will be greatly improved if the butt end of the leader is at least as heavy as .014 or .015 from where it may be tapered down gradually as fine as you like on the point.

For bass fishing, a longer and more powerful rod is desirable, not because of the heavier average of the fish one may expect to catch, but because of the larger and heavier flies or lures that one must frequently use in order to take bass. For this work, I prefer a 9½ foot rod weighing 5¾ to perhaps slightly more than 6 ounces. Such a rod should have considerable power without being stiff, for the cast of the large fuzzy bass surface lures is somewhat slower than that of the trout dry fly and the rod should have the power to follow through without excessive speed of action which is usually associated with stiffness. The proper weight line for such a rod would be a D level or an HCH tapered.

I can not over emphasize the necessity for getting the right weight line for the weight and action of any particular rod. Many small town tackle stores do not carry a line in stock that is heavy enough for even a 3½ ounce fly rod. The H and I size fly lines frequently seen in tackle stores have no place in a fly easter's equipment as they are entirely too light to develop the action of any practical fly rod. As an aid in selecting the proper size line for any particular rod, I am listing below a table of rod lengths and weights with the proper size line.

Note:—These weights are for good quality modern split bamboo dry fly rods with wood reel seats. If equipped with metal reel seat, the same rod will weigh ¼ ounce more. If the rod is comparatively stiff or powerful, the next larger size line may cast better. Cheap rods or those built twenty years ago, will have a softer or more limber action for any given weight and may require the next lighter line size.

ROD		LINE	
Length	Weight	Level	Tapered
7½ Feet	3 to 3¼ ounces	G	HFH
8 "	3⅝ to 3⅞ ounces	F	HEH
8½ "	4⅛ to 4¼ ounces		
8 "	4 to 4⅛ ounces	E	HDH
8½ "	4½ to 4¾ ounces		
9 "	5 ounces	D	HCH
9 "	5½ ounces		
9½ "	5¾ to 6 ounces		

Pennsylvania Trout Streams Stocked With Legal Trout

For the information of Pennsylvania fishermen, the following streams throughout the Commonwealth were stocked with trout of legal size or over for the coming season.

Adams—brook trout, East Branch Little Antietam Creek, Carbaugh Run, Conewago Creek, Conococheague Creek, Little Marsh Creek, Toms Creek; rainbow trout, East Branch Little Antietam Creek.

Armstrong—brook trout, Hauling Run, Cornplanter Run, Mill Run, Patterson Creek, North Fork Pine Creek, Scrubgrass Creek.

Beaver—brook trout, Brady Run; brown trout, Big Traverse Creek.

Bedford—brook trout, Beaver Creek, Bobs Creek, Cove Creek, Deaner Gap Run, Deeters Run, Earnest Run, Flintstone Creek, Potter Creek, Shermans Valley Run, Three Spring Creek; brown trout, Buffalo Creek, Cumberland Valley Run, Imlertown Run, Wills Creek, Raystown Branch, Yellow Creek; rainbow trout, Thos. W. Koon Lake.

Berks—brook trout, Back Creek, Cold Run, Furnace Creek, Hay Creek, Indiana Creek, Mill Creek, tributary to Schuylkill River, Mill Creek, tributary to Little Swatara Creek, Mill Creek, tributary to Schuylkill River, Moselem Creek, North Kill Creek, Northwest Branch Perkiomen Creek, Pine Creek, West Branch Pine Creek, Raush Creek, Rock Run, Scott Run, Swamp Creek.

Blair—brook trout, Blair Gap Run, Bells Gap Run, Big Fill Run, Bobs Creek, Canoe Creek, Pole Cat Run, Sandy Run, Sinking Creek, South Poplar Run, Vanscoyoc Run; brown trout, Bald Eagle Creek, Clover Creek, Piney Creek.

Bradford—brook trout, Daggett Creek, Millstone Creek, Schroder Creek, Seeley Creek, South Creek, Sugar Run.

Bucks—brook trout, Beaver Run, Cooks Creek, Tinicum Creek; brown trout, Pine Run.

Butler—brook trout, Bear Creek, North Branch Bear Creek, Black Run, Little Buffalo Run, Chauncey Run, Little Connoquenessing Creek, Cornplanter Run, Hogue Run, McMurry Run, Silver Creek, North Branch Slippery Rock Creek; brown trout, Thorn Creek.

Cambria—brook trout, Beaver Dam Run, Bender Run, Bens Creek, North Branch Blacklick Creek, South Branch Blacklick Creek, Bobs Creek, Cedar Run, Little South Fork of Conemaugh River, Little North Branch of Conemaugh River, Duclos Run, Findlay Run, Hinckstown Run, Big Laurel Run, Mudlick Run, Rogues Harbor Run, Saltlick Run, Mineral Point Dam, Spring Run, Stewart Run; brown trout, Chest Creek, Clearfield Creek.

Cameron—brook trout, Brooks Run, Clear Creek, Hicks Run, East Branch Hicks Run, Hunts Run, Lower Jerry Run, Upper Jerry Run, Lick Island Run, Lushbaugh Run, Mix Run, North Creek, Portage Creek, Sterling Run, Wykoff Run; brown trout, Driftwood Branch, Sinnemahoning Portage Creek.

Carbon—Aquashicola Creek, Big Bear Creek, Buckwa Creek, Drake Creek, Fawn Run, Hays Creek, Hickory Run, Hunter Creek, James Run, Lesley Run, Mauch Chunk Creek, Mud Run, Pine Run, Stoney Creek, Quakake Creek; brown trout, Hays Creek, Pohopoco Creek, Wild Creek; rainbow trout, Big Bear Creek, Quakake Creek.

Centre—brook trout, Black Bear Run, Cold Stream, South Fork Beech Creek, Benner Run, West Branch Big Run, Cedar Creek, Cherry Run, Fields Run, Little Fishing Creek, Galbraith Gap Run, Laurel Run, tributary to Muddy Run, Laurel Run, tributary to Sinking Creek, Laurel Run, tributary to Bald Eagle Creek, Lick Run, Spruce Creek, Moshannon Creek, Mountain Branch Moshannon Creek, Penns Creek, Pine Creek, Pine Run, Pleasant Gap Run, Rapid Run, Roaring Run, Little Sandy Run, Big Sandy Run, Sinking Creek, Six Mile Run, Spring Creek, Wallace Run, White Deer Creek, Winkleblack Run, Wolf Run, Yost Run; brown trout, Bald Eagle Creek, Elk Creek, Hosler Dam, Logan Branch, Marsh Creek, Little Moshannon Creek, Penns Creek, Pine Creek, Poe Creek, Spring Creek; rainbow trout, Little Moshannon Creek, Rockview Penitentiary Reservoir, Spring Creek.

Chester—brook trout, Birch Run, tributary to Buck Creek, Birch Run, tributary to West Branch Brandywine Creek, Black Horse Run, Doe Run, French Creek, Lyndell Creek, Pusey Run, Rock Run, Two Log Run, Valley Creek, Waln Run, White Clay Creek; brown trout, White Clay Creek, Middle Branch White Clay Creek.

Clarion—brook trout, Buck Run, Deer Creek, Mahles Run, Mill Creek, Paint Creek, Little Piney Creek, Reyner Run, Little Toby Creek, Toms Run, Step Creek, East Sandy Creek; brown trout, Piney Creek; rainbow trout, Toms Run.

Clearfield—brook trout, Anderson Creek, Bear Run, Beaver Run, Bell Run, Bilger Run, Curry Run, Deer Creek, Deer Run, Fork Run, Gifford Run, Hackenberry Run, Hazlett Run, Little Laurel Run, East Branch Mahoning Creek, Medix Run, Moshannon Creek, Montgomery Creek, West

(Please turn to page 12)

PENNSYLVANIA TROUT

(Continued from page 9)

up a better acquaintance with the rainbow trout, for during 1935, the Fish Commission distributed 81,954 adult fish ranging in length from 11 to 12 inches to approved streams.

A characteristic marking that makes identification of the adult rainbow easy is the rainbow stripe, a blending of pale blue and pink extending from base of gill to base of tail along the lateral line in the middle of the body. It is also easily identified by numerous black spots extending over the entire length of the body, head and tail. As in the brown trout, small scales cover the body, although in both introduced species, the scales are much more prominent than those occurring in the native brook trout. The accompanying cut of a rainbow trout is so clear and sharp that our readers should be readily able to identify the species by using it as a guide. In glancing over the picture, note the small, graceful head, forward position of the eye, broad girth, and black mottling of the dorsal fin and adipose fin. The broad-girthed build of this trout indicates power aplenty, and it is real manna for our anglers who delight in fly fishing.

In this brief consideration of brook, brown and rainbow trout, we have attempted to make one fact apparent. Each species ranks with the topflight of game fishes, each has its admirers, and each will give the fisherman sport of the highest calibre. Perhaps, too, we might add that a 10-inch brook trout from one of our smaller mountain or meadow streams, merits as much pride on the part of the angler who made the catch as does a larger brown or rainbow taken from heavier water.

May these trout tax your tackle during the coming season.

TROUT STREAMS STOCKED

(Continued from page 11)

Branch Montgomery Creek, Mosquito Creek, Mountain Run, East Branch Muddy Run, Sandy Creek, Sawmill Run, Bennett Branch, Upper Three Runs, Trout Run, Whiskey Run, North Witmer Run, Wilson Run, South Witmer Run; brown trout, Little Clearfield Creek, Big Fishing Creek, Laurel Run, Mosquito Creek, Lick Run, Sugar Camp Run.

Clinton—brook trout, Backer Run, Beaverdam Run, Big Run, Swamp Branch Big Run, Middle Branch Big Run, Birch Island Run, Cedar Run, Chatham Run, Cherry Creek, Cooks Run, Fish Dam Run, Big Fishing Creek, Hammersly Fork, Hyner Run, Kettle Creek, Long Run, Monument Run, Paddy Run, Rattlesnake Run, Tangascootack Creek, North Branch Tangascootack Creek, Trouts Forks, Twin Run; brown trout, Antis Creek, Lick Run, West Branch Young Womans Creek, Right Branch Young Womans Creek, Young Womans Creek.

Columbia—brook trout, Cobbs Creek, Little Fishing Creek, Lick Run, Mugser Run, Roaring Creek, West Creek; brown trout, Fishing Creek.

Crawford—brook trout, Brannon Run, West Branch Cussewago Creek, Federal Creek, Gravel Run, Kelly Run, McLaughlin Run, Mackey Run, Mosey Run, Muddy Creek, East Branch Muddy Creek, Negus Run, Patrick Run, Sandy Creek, Stearns Run, Middle Branch Sugar Creek, North Branch Middle Branch Sugar Creek, North Branch Woodcock Creek; brown trout, Little Sugar Creek, Thompson Run.

Cumberland—brook trout, Alexander Springs Run, Big Springs, Bird Run, Cockleys Run, Green Springs, Hogestown Run, Mountain Creek, Mountain Rock Run, Old Town Run, Trindle Springs; rainbow trout, Big Springs, Means Run, Furnace Run, Yellow Breeches Creek.

Dauphin—brook trout, Clarks Creek, South Fork Powells Creek, Stoney Creek, Swenks Run, Wolands Run; brown trout, Manada Creek, West Branch Rattling Creek; rainbow trout, Clarks Creek.

Elk—brook trout, Bear Creek, Bear Run, Belmuth Run, Bear Run, Big Run, Boggy Run, East, Branch Clarion River, Crooked Creek, Hicks Run, East Branch Hicks Run, Hoffman Run, Hunters Run, Island Run, Kersey Run, West Branch Kersey Run Laurel Run, Maxwell Run, Medix Run, Mix Run, Mohan Run, Mosquito Creek, Paige Run, Spring Creek, East Branch Spring Creek, Straight Creek, South Branch Straight Creek, Trout Run, Wilson Run, Wolf Lick Run, Wyncoop Run; brown trout, Driftwood Branch, Laurel Run, Big Mill Creek, West Clarion Creek.

Erie—brook trout, Beaver Run, South Branch French Creek, Halls Run, Hatch Hollow Run, Hubble Run, East Branch LeBoeuf Creek, Lilley Run, Riley Run, Shaws Run, Taylor Run, Thomas Run, Thornton Run, Vincent Run, Trout Run, Watson Creek, Brandy Run, Black Creek, Bear Run, East Branch Conneaut Creek, Little Conneaut Creek, West Branch Conneaut Creek, Crooked Creek, Darrow Brook, Fish Hatchery Outlet.

Fayette—brook trout, Black Creek, Beaver Run, Buck Run, Dunbar Creek, Feiks Run, Laurel Run, tributary to Youghiogheny River, Laurel Run, tributary to Big Meadow Run, Mill Run, tributary to Indian Creek Dam, Mill Run, tributary to Big Sandy Creek, South Fork Mountain Stream, Mountain Creek, Rubles Run; rainbow trout, Big Meadow Run.

Forest—brook trout, Bear Creek, Beaver Creek, Blue Jay Creek, West Branch Blue Jay Creek, Bobbs Creek, The Branch, Coleman Run, Coon Creek, Little Coon Creek, Fork Run, Hemlock Creek, East Hickory Creek, Hunter Run, tributary to Spring Creek, Hunter Run, tributary to Allegheny River, Johns Run, Lamentation Run, Maple Creek, Minister Run, Otter Creek, Prather Run, Ross Run, Salmon Creek, Little Salman Creek, Spring Creek, Tubbs Run, Watson Branch; brown trout, West Hickory Creek, West Branch Millstone Creek; rainbow trout, Spring Creek.

Franklin—brook trout, East Branch Little Antietam Creek, Conococheague Creek, Broad Run, Carbaugh Run, Dennis Creek, Falling Springs Creek, Muddy Run, Red Run, Roe Run, Spring Run, Trout Run, tributary to West Branch Conococheague Creek, Trout Run, tributary to Conodoguinet Creek; brown trout, West Branch Conococheague Creek; rainbow trout, East Branch Little Antietam Creek, Falling Springs Creek.

Fulton—brook trout, Little Aughwick Creek, Brush Creek, Little Brush Creek, Nine Mile Run, Oregon Creek, Roaring Run, South Brush Creek, Springs Valley Run, Wooden Bridge Creek.

Huntingdon—brook trout, Little Aughwick Creek, Barree Run, Black Log Creek, Laurel Run, Licking Creek, Nine Mile Run, Sadler Run, Sadler Creek, Spruce Creek, Tatman Run, Little Trough Creek, Shaver Creek; brown trout, Spruce Creek, East Branch Standing Stone Creek, Standing Stone Creek, Greenwood Furnace Dam.

Indiana—brook trout, Mudlick Run, Brush Creek, Carney Run, Downey Run, Laurel Run, Little Mahoning Creek, North Branch of Little Mahoning Creek, Mardis Run, Toms Run, South Branch Twolick Creek, Little Yellow Creek; brown trout, Yellow Creek.

Jefferson—brook trout, Big Run, Callen Run, Camp Run, Cathers Run, Clear Run, Coder Run, Haram Run, Laurel Run, tributary to East Branch Mahoning Creek, Laurel Run, tributary to Little Mill Creek, East Branch Mahoning Creek, Mill Creek, tributary to Clarion Creek, Mill Creek, tributary to Sandy Lick Creek, Little Mill Creek, tributary to Mill Creek, Little Mill Creek, tributary to Mill Creek, Rattlesnake Run, South Branch North Fork Red Bank Creek, North Fork Red Bank Creek, Little Sandy Creek; brown trout, Clear Creek, Manners Run, North Fork Red Bank Creek; rainbow trout, Cathers Run, Clear Creek.

Juniata—brook trout, Big Run, Horning Run, Horse Valley Run, Liberty Valley Run, Licking Creek, Spankhammer Run, Willow Run; brown trout, Lost Creek, Lick Creek.

Lackawanna—brook trout, Gardner Creek, Lehigh River Pond Creek, Roaring Brook, West Branch Wallenpaupack Creek, Wilcox Creek; brown trout, Gardner Creek, Lehigh River; rainbow trout, Lehigh River.

Lancaster—brook trout, Charles Run, Climbers Run, Donegal Creek, Little Conestoga Creek, Gladfelters Run, Hammer Creek, Indian Run, Longs Run, Middle Creek, Muddy Run, Rock Run, Seglock Run, Stewarts Run, Swarr Run, Wisslers Run; brown trout, Big Chickies Creek, Fishing Creek, Shearers Run.

Lawrence—brook trout, Taylor Run; rainbow trout, Little Neshannock Creek.

Lebanon—brook trout, Bachman Run, Big Chickies Creek, Evening Branch, Hammer Creek, West Branch Hammer Creek, Indiantown Creek, Millback Creek, Snitz Creek, Stoney Creek.

Lehigh—brook trout, Big Trout Run, Cedar Creek, Little Lehigh River, South Branch Saucon Creek, Trout Creek; brown trout, Little Lehigh River, Jordan Creek.

Luzerne—brook trout, Arnold Creek, Bear Creek, Bolwards Run, Bowmans Creek, Harveys Creek, Linesville Creek, Maple Creek, Meadow Run, Nescopeck Creek, Phillips Creek, Pine Creek, Shades Creek, Little Shickshinny Creek, Stoney Run, Ten Mile Run, Wapwallopen Creek, Wrights Creek; brown trout, Bear Creek, Hunlock Creek, Huntingdon Creek, Kitchen Run, Lehigh River, Wapwallopen Creek; rainbow trout, Lehigh River.

Lycoming—brook trout, Little Bear Creek, Big Run, Black Hole Creek, Blockhouse Run, English Run, Fourth Gap Creek, Grays Run, Hogland Run, Larrys Creek, Lick Run, McMurrin Run, West Mill Creek, Mill Run, Little Muncy Creek, Nippenoise Creek,

Upper Pine Bottom Run, Little Pine Creek, Pleasant Stream, Plunketts Creek, Roaring Branch, Spring Creek, Trout Run, tributary to Lycoming Creek, Trout Run, tributary to Pine Creek, Wallis Run, White Deer Hole Creek; brown trout, Cedar Run, Larrys Creek, Loyalsock Creek, Lycoming Creek, Muncy Creek, Nippenoise Creek, Rock Run, Slate Run.

McKean—brook trout, Bell Run, Chappell Fork, West Clarion Creek, Comes Creek, Fife Run, Fuller Brook, Kinzua Creek, Large Run, Penna. Pond, Seven Mile Run, Sugar Run, North Branch Sugar Run, West Branch Tuneneguent Creek, Two Mile Run, Willow Creek; brown trout, South Fork Kinzua Creek, Marvin Creek, Potato Creek, Portage Creek, East Branch Tionesta Creek, West Branch Tuneneguent Creek; rainbow trout, Portage Creek.

Mercer—brook trout, Big Run, Deer Creek, Hanna Creek, Johnson Run, Lackawannock Creek, Mill Run, Mill Creek, tributary to Cool Spring Creek, Mill Creek, tributary to French Creek, Probst Run, Little Sandy Creek, Swamp Run, Sandy Creek, West Branch Wolf Creek, East Branch Wolf Creek, North Branch Wolf Creek; brown trout, Little Neshannock Creek; rainbow trout, Little Neshannock Creek.

Mifflin—brook trout, Brookland Run, Havice Creek, Kishacoquillas Creek, East Branch Kishacoquillas Creek, Lingle Run, McKinley Run, Musser Run, Swift Run, Tea Creek, Treaster Valley Run; brown trout, Kishacoquillas Creek, Long Meadow Run, Penns Creek, Strodes Run; rainbow trout, Kishacoquillas Creek.

Monroe—brook trout, Aquashicola Creek, Buckwa Creek, Big Bushkill Creek, Bushkill Creek, Cherry Creek, Dotter Creek, Forest Hill Creek, Kettle Creek, Lake Creek, Laurel Run, Leavetts Branch, McMichaels Creek, Middle Creek, Mixel Creek, Pensyl Creek, Pohopoco Creek, Scott Run, Tobyhanna Creek, East Branch Tobyhanna Creek; brown trout, Broadheads Creek, Middle Branch Broadheads Creek, Lehigh River, Paradise Creek, Pocono Creek, Pohopoco Creek, Sambo Creek; rainbow trout, Broadheads Creek, Lehigh River, Snow Hill Dam.

Montgomery—brook trout, Mill Creek; brown trout, Deep Creek.

Northampton—brook trout, Bushkill Creek, Indian Creek, Little Bushkill Creek, Coffee Town Creek, Monocacy Creek, Jacobus Creek, Martins Creek, Little Martins Creek, Mud Run, Saucon Creek, Waltz Creek; brown trout, Bushkill Creek, Hokendauqua Creek; rainbow trout, Saucon Creek.

Perry—brook trout, Browns Run, Carroll Run, Green Valley Run, Horse Valley Run, Houstons Run, Laurel Run, Liberty Valley Run, McCabes Run, Montour Run, Shermans Creek; brown trout, Little Juniata Creek.

Philadelphia—brown trout, Wissahickon Creek.

Pike—brook trout, Big Bushkill Creek, Little Bushkill Creek, Middle Bushkill Creek, Dingmans Creek, Dwarfkill Creek, Gifford Creek, Indian Ladder Creek, Killam Creek, Mill Rift Creek, Raymondskill Creek, Red Rock Creek, Sawkill Creek, Shohola Creek, Twin Lake Creek; brown trout, Lackawaxen River, Raymondskill Creek, Wallenpaupack Creek, West Branch Wallenpaupack Creek.

Little Loyalsock Creek, Sullivan County

Potter—brook trout, Allegheny River, Corbet Branch, Cross Fork Creek, Cushing Creek, Dingmans Run, Left Hand Branch Dingmans Run, Dry Run, Eleven Mile Creek, Fishing Creek, East Branch Fishing Creek, West Branch Fishing Creek, Genesec River, West Branch Genesee River, Middle Branch Genesee River, Little Kettle Creek, Lyman Run, Big Moore Run, Nelson Run, Nine Mile Run, South Branch Oswayo Creek, Genesee Fork Pine Creek, West Branch Pine Creek, West Branch Portage Creek, East Branch Portage Creek, Sartwell Creek, East Fork of First Fork Sinnemahoning Creek, South Fork of First Fork Sinnemahoning Creek, Trout Run; brown trout, Allegheny River, Cowanesque River, Kettle Creek, Mill Creek, Pine Creek, Oswayo Creek, First Fork Sinnemahoning Creek, Right Branch Young Womans Creek.

Schuylkill—brook trout, Bear Creek, Beaver Creek, Cold Run, Black Creek, Little Catawissa Creek, Deep Creek, Evening Branch, Fishing Creek, West Branch Fishing Creek, Kelayres Rod and Gun Club Pond, Kombs Creek, Locust Creek, Mahoning Creek, Neifert Creek, Pine Creek, tributary to Little Schuylkill River, Pine Creek, tributary to Mahantango Creek, Rattling Run, Rouch's Creek, Spiese Run, Sugar Loaf Run, Wolf Creek; brown trout, Mahoning Creek.

Snyder—brook trout, Aigler Run, Brickhart Run, Krepp Gap Run, Kuhn-Hoover Run, North Branch Mahantango Creek, Mitchells Run, Moyer Gap Run, Swift Run, Trout Run; rainbow trout, North Branch Mahantango Creek.

Somerset—brook trout, Beaver Dam Run, South Fork Bens Creek, Blue Hole Run, Breast Work Run, Brush Creek, Drake Run, Iser Run, Janis Mill Run, Big Piney Run, Sandy Run, Shafer Run, Three Lick Run; brown trout, Clear Shade Creek, Flaugherty Creek, Raystown Branch Juniata River, Laurel Hill Creek, Whites Creek, Wills Creek; rainbow trout, Laurel Hill Creek.

Sullivan—brook trout, Black Creek, Double Run, Elk Creek, Elk Lick Run, West Branch Fishing Creek, East Branch Fishing Creek, Glass Creek, Hogland Branch, Kettle Creek, Lewis Creek, Lick Creek, North Branch Mehoopany Creek, Mill Creek, Muncy Creek, Ogdonia Creek, Pigeon Creek, Pole Bridge Run, Rock Run, tributary to Muncy Creek, Rock Run, tributary to Little Loyalsock Creek, Sullivan Branch; brown trout, Loyalsock Creek, Little Loyalsock Creek.

Susquehanna—brook trout, Butler Creek, Gaylord Creek, Harding Creek, East Branch Lackawanna Creek, West Branch Lackawanna Creek, Mitchell Creek, Nine Partners

Fayette—brook trout, Bear Creek, Beaver Creek, Riley Creek, Starrucca Creek, Tunkhannock Creek, East Branch Tunkhannock Creek, Upper East Branch Tunkhannock Creek; brown trout, Harmony Creek, Starrucca Creek; rainbow trout, Starrucca Creek.

Tioga—brook trout, Asaph Run, Bailey Creek, Big Run, Elk Run, Fall Brook, Four Mile Run, Hills Creek, Kettle Creek, Long Run, tributary to Babba Creek, Long Run, tributary to Pine Creek, Mill Creek, West Branch Mill Creek, Norris Brook, Phoenix Run, Tioga River; brown trout, Cedar Run, Cowanesque River, Pine Creek, Seeley Creek, Stony Fork Creek, Tioga River, Towanda Creek; rainbow trout, Pine Creek.

Union—brook trout, Bear Run, Beaver Run, Black Run, Buffalo Creek, Chambers Run, Corls Run, Furnace Gap Run, Half Way Run, Henstep Run, Rapid Run, Sand Springs Run, Sheesley Run, Slide Hollow Run, Spring Creek, Spruce Run, White Deer Creek, White Spring; brown trout, North Branch Buffalo Creek, Laurel Run, Penns Creek, Weiker Run, White Deer Creek; rainbow trout, Halfway Dam.

Venango—brook trout, Cherry Tree Run, Cherry Run, Hemlock Creek, Mill Creek, Horse Creek, Panther Creek, West Pithole Creek, Porkey Creek, Richey Run, East Sandy Creek, South Branch Sandy Creek, Little Sandy Creek, North Branch Slippery Rock Creek, East Branch Sugar Creek, Middle Branch Sugar Creek, Upper Two Mile Run, Lower Two Mile Run, Tarr Kill Creek, Stewart Run; brown trout, Pithole Creek, Little Scrubgrass Creek; rainbow trout, Little Scrubgrass Creek.

Warren—brook trout, Ackley Run, Arnot Creek, Ben Jeorge Creek, Coffee Creek, Dunn Run, Four Mile Creek, Hemlock Run, Hosmer Run, Irvine Run, Jackson Run, Lamb Run, McGuire Run, Matthews Run, Mead Run, Minister Run, Perry McGee Run,

Phelps Creek, Pine Creek, Queen Creek, Rock Hollow Run, Satler Run, Lower Sheriff Creek, Upper Sheriff Creek, Six Mile Run, Thompson Run, North West Branch Spring Creek, Tidioute Creek, Willow Creek, Wilson Run, Little Brokenstraw Creek, East Branch Caldwell Creek, Farnsworth Creek, East Hickory Creek; brown trout, Brown Run, Caldwell Creek, West Branch Caldwell Creek, West Hickory Creek, Pine Creek, Jackson Run, Tionesta Creek, East Branch Tionesta Creek; rainbow trout, Farnsworth Creek, Pine Creek.

Wayne—brook trout, Babitville Creek, Balls Creek, Beaver Dam Co., Brink Brook, Calkins Creek, North Branch Calkins Creek, South Branch Calkins Creek, Crammer Creek, Crooked Creek, Big Branch Dyberry Creek, Equinunk Creek, Little Equinunk Creek, South Branch Equinunk Creek, Haags Creek, Hollister Creek, Indian Orchard Creek, Johnson Creek, Jones Creek, Justin Creek, East Branch Lackawanna River, West Branch Lackawaxen River, Wynart Branch Lackawaxen River, Lehigh River, Middle Creek, Mile Brook, Moss Hollow Creek, Roots Creek, Shad Pond Creek, Shehawken Creek, Spencer Creek, East Branch Starrucca Creek, Wilcox Creek; brown trout, Butternut Creek, Dyberry Creek Equinunk Creek, Little Equinunk Creek, Lackawaxen River, West Branch Lackawaxen River, Wallenpaupack Creek, West Branch Wallenpaupack Creek: rainbow trout, West Branch Lackawaxen River, West Branch Wallenpaupack Creek.

Westmoreland—Brook trout, Baldwin Run, Camp Creek, Furnace Run, tributary to Laughlintown Run, Furnace Run, tributary to Loyalhanna Creek, Right Branch Furnace Run, Indian Creek, Laughlintown Run, Lick Run, Loyalhanna Creek, Mill Creek, Middle Fork Mill Creek, North Fork Mill Creek, South Fork Mill Creek, Pike Run, Powder Mill Run, tributary to Baldwin Run, Powder Mill Run, tributary to Loyalhanna Creek, Little Pucketa Creek, Roaring Run, Shannon Run; brown trout, Tub Mill Run, Linn Run, Jacobs Creek.

Wyoming—brook trout, Beaver Run, Bowmans Creek, Leonards Creek, Meshoppen Creek, Mehoopany Creek, North Branch Mehoopany Creek, West Branch Meshoppen Creek, Riley Creek; rainbow trout, Bowmans Creek.

York—brook trout Fishing Creek, Furnace Run, Leibs Creek, Orson Run, Otter Creek, Rehmayer Hollow Run, Toms Run.

YORK WALTONIANS HEAR TALKS ON FISH, GAME

Featured by addresses by Seth Gordon, Executive Secretary of the Game Commission and Oliver M. Deibler, Commissioner of Fisheries, the annual banquet of the York Chapter of the Izaak Walton League was held in York on the evening of February 20.

The work of the Fish Commission through its fish farms in bringing better fishing to Pennsylvania was stressed by Commissioner of Fisheries Deibler in his address. He struck at stream pollution, saying that for every mile of water approved for fish in the state there are four and one-half miles of polluted water. The Izaak Walton League was commended for its stand in the battle against pollution.

For Better Fishing—Release Fish Carefully

By KENNETH A. REID

Member, Board of Fish Commissioners

The admonition to wet one's hand before releasing a fish, on the theory that a dry hand injures the fish by removing the "protective slime," has been proven fallacious. A wet hand increases the difficulty of holding a slippery fish. The more he squirms, the tighter you squeeze until often his internal organs are crushed. This does far more harm than any removal of exterior slime.

It is far better to avoid handling the body of the fish at all. Lift him just above the water on the leader and grasp the point of the lower jaw between the thumb and forefinger, (pickerel, pike, wall-eyes, and muskies excepted), while removing the hook with the other hand,—or small pliers. If a heavy fish, (and many sportsmen-anglers are now releasing fish well above minimum size), run one hand down the line and release him underwater in the same manner. In either case, the fish will squirm less, and one's hand is not covered with slime afterward.

Never *throw* a fish back—*release* him with *tender care!*

Mr. Gordon spoke on the splendid part taken by the Izaak Walton League in molding public thought along proper conservation lines. His address also emphasized the need for good sportsmanship in taking a catch of fish or bag of game, the idea being to kill less and make up for reduction in kill by physical relaxation and spiritual uplift. He made a strong appeal to the sportsmen to save starving game. Judd C. Turner, deputy executive secretary of the Game Commission, commended the York Chapter on the fine event it had sponsored and extended greetings to the York sportsmen from sportsmen in the western part of the state.

FIND TROUT BURIED BENEATH STREAM BED

The following interesting communication concerning the tendency of trout, during periods of low water, to burrow into the gravel or beneath rocks in the stream bed, has been submitted by Clayton L. Peters, secretary of the True Sportsmen's League at Lykens.

"Some years ago I read in Hewitt's 'Telling on the Trout', that trout will burrow or rather nose down into the gravel and sand in extremely low water conditions, in order to seek cool water.

"I had ideas of my own concerning this until recently I have had it proven several times and thought it interesting enough to pass along to fellow anglers.

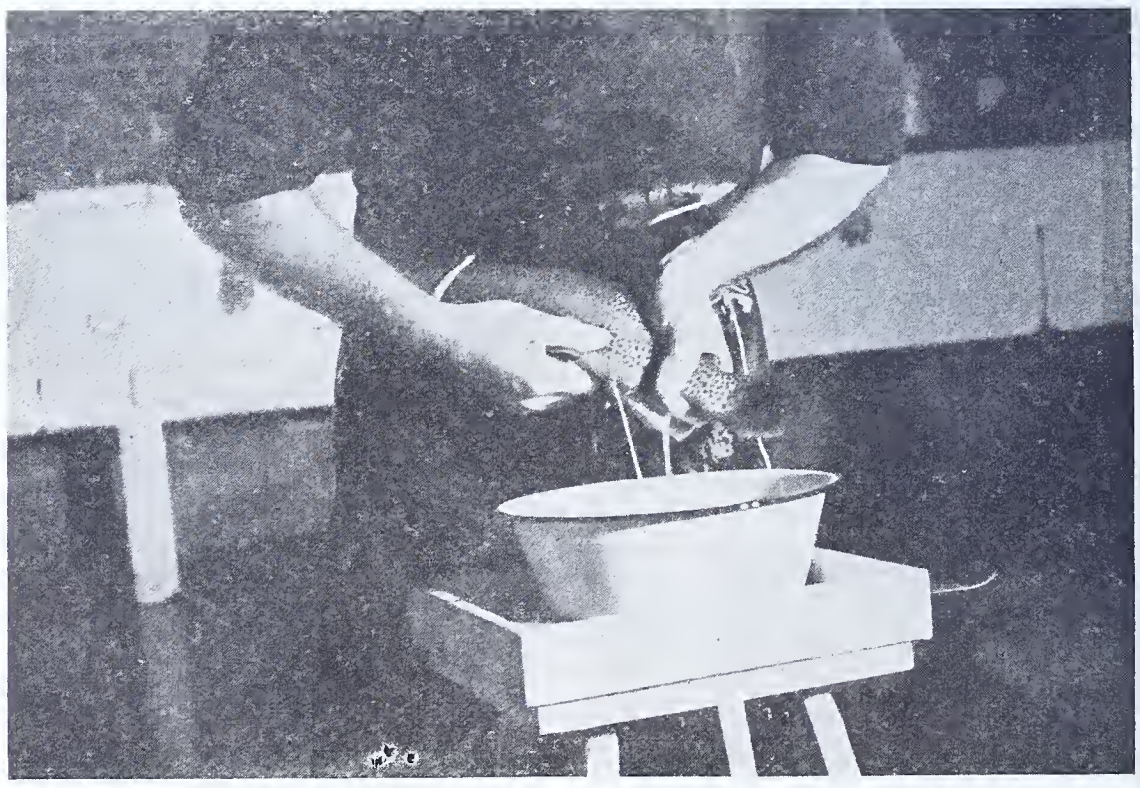
"Three different trout were *dug up* along the banks of Rattling Creek near Lykens by workmen on a Public Works Project.

"At least one of these trout was six feet away from the creek channel and about 20 inches below the top gravel on the creek's bed.

"This particular fish was in a water pocket under a large rock and when dug up and placed in the main current, swam sluggishly away.

"I was not able to get definite information as to the distance away from the creek bed the other two trout were but, we know they were at least fifteen inches under the surface of the creek bed.

"The only conclusion we can draw is that last summer during the extremely low water these trout nosed down into the gravel and sand in order to survive the drought."



Taking Milt from Male Rainbow Trout at Bellefonte

MONTGOMERY SPORTSMEN STAGE 41st BANQUET

The forty-first annual banquet of the Montgomery County Fish, Game and Forestry Association was held at the Valley Forge Hotel on the evening of February 8. Members enjoyed one of the most enjoyable get-togethers in the history of the Association. Reports of committees on fish, game and forestry were read, and progress in the intensive stream improvement campaign being fostered by this active group in southeastern Pennsylvania was discussed.

A fine talk by J. Hansell French, Secretary of Agriculture and vice-president of the Montgomery group, concerning fish and game conservation in the county, and reminiscences "From Horse and Buggy to Autos and Airplanes" by Ivins C. Walker were features. Moving pictures on fishing and hunting topped off a well-rounded program.

Officers of the Association for 1936 are Hon. Harold G. Knight, president, Hon. J. Hansell French, Burd P. Evans, H. H. Ganser and Charles C. Hughes, vice-presidents, J. Warren Zeigler, secretary, and B. Frank Nyce, treasurer.

BLAIR COUNTY RALLY ATTENDED BY 700

Talks by Archibald Rutledge, noted poet and author, Ross Leffler, member of the Board of Game Commissioners, and Harry E. Weber, member of the Fish Commission, featured the dinner of the Blair County Fish and Game Association held in Jaffa Mosque, Altoona, on the evening of February 20. More than 700 sportsmen from Blair and neighboring counties gathered at the dinner, which is one of the premier sportsmen's events in the state.

Dr. Rutledge in his address spoke of the whims that govern wild creatures. Mr. Leffler made a strong plea to save game from starvation and spoke on the history of the conservation movement. Mr. Weber urged the sportsmen to take advantage of WPA labor in improving streams.

The program was exceptionally well balanced and most enjoyable.

Stream Improvement Devices Constructed in Lancaster County Trout Streams by WPA Workers. This Work, under Direction of R. C. Sullenberger, was Backed by the Lancaster County Division of the Pennsylvania Federation of Sportsmen's Clubs.

Finis to a Thrilling Scrap. Seth Gordon, Secretary of the Game Commission, Snapped this Photo of Earl Filbert, Hazleton, Just as He Landed a Trout at Spring Creek Last Year

Sportsmen's Federation Adopts Fine Program

Braving icy roads and extremely cold weather, more than 200 delegates from all sections of Pennsylvania attended the meeting of the Pennsylvania Federation of Sportsmen's Clubs at the State Capitol, Harrisburg, on February 12. It was generally agreed that this year's get-together was one of the most constructive and successful in the history of the Federation.

Stressing the vital necessity of cooperation between units and the importance of organizing sportsmen in all the counties, the Federation concluded a splendid all-day session. Hon. Grover C. Ladner, Deputy Attorney General, was re-elected president, while Dr. C. A. Mortimer, Secretary of the Federation, was re-elected to that post. John Youngman, vice-president, of Williamsport, was succeeded by C. R. Hobson of Homestead. Both Mr. Youngman and Mr. Hobson are intensely interested in the Federation cause, and Mr. Youngman's successor is expected to carry on this year the fine program that guided the Federation's activities since its organization. Under the leadership of Mr. Ladner and Dr. Mortimer, a sound and progressive program for the benefit of all Pennsylvania sportsmen will be carried out this year.

Discussion of various phases of the year's program featured the meeting. The delegates and members heard officials from various departments outline plans for 1936. Speakers were Hon. J. Hansell French, Secretary of Agriculture, Seth Gordon, Executive Secretary of the Game Commission, Hon. Nicholas Biddle, President of the Game Commission, Hon. O. M. Deibler, Commissioner of Fisheries, Hon. Kenneth A. Reid, Member of the Fish Commission, and Hon. J. Q. Creveling, Vice-President of the Game Commission.

In speaking on the drive against stream pollution, President Ladner explained that a three-point program of anti-pollution activities will be stressed this year. First will be efforts to have passed the Thompson Bill, No. 273 in the Senate. This Pure Streams Bill during the last session was finally carried to the floor of the Senate, where the Senators who voted against it were placed on record, their names and those favoring the measure in the Senate were then read. Another bill, the Ruth Bill, which would impose a fine of $10 for every fish killed by wanton stream pollution by industry, was passed by the House but killed in the Senate. The fight for its passage will constitute the second phase of the drive against pollution. The third phase, passage of a bill to set aside funds for mine sealing, was alone successful in the last session. The work is now being carried through. Necessity of local communities throwing themselves into the fight against pollution was also emphasized.

Other members of the Fish Commission present at the meeting were Hon. Milton L. Peek, Hon. Edgar W. Nicholson, Hon. Dan R. Schnabel, Hon. Charles A. French, Hon. Harry E. Weber, and H. R. Stackhouse, Secretary of the Board. Hon. Samuel Castner, Hon. Robert Lamberton and Hon. William Fluke were other members of the Board of Game Commissioners who attended.

The work of CCC camps in Pennsylvania relative to forests and wild life betterment was explained by Captain Jack Thomas, who represented Camps on State Game Lands. An effort will be made to retain these camps as long as possible.

The following resolutions were approved by the conference:

Reaffirmation of the Federation's endorsement of Senate Bill No. 273 on Stream Pollution.

Reaffirmation and endorsement of House Bill 323 providing a fine of $10 for each fish killed by pollution.

Endorsement of the Lonergan anti-pollution bill.

Removing the skunk from the protected list.

Recommending that more revenue from dog licenses be allocated the Department of Agriculture for carrying on dog control work.

That the Board of Game Commissioners continue their program of forestry cutting to improve food conditions for bear.

That the Game Commission be given discretionary power to fix bounties.

That the trout limit be reduced from 15 to 10.

The Federation favored an amendment to the constitution making it unlawful to use the Game and Fish funds for any other purpose.

Approved resolution making it unlawful to place traps in dens or holes for any purpose.

Opposed the transfer of the United States Forestry Service from the Department of Agriculture to the Department of the Interior.

Approved an increase of $.50 in the resident fishing license and a corresponding increase in the non-resident license, the additional revenue to be used for the acquisition and maintenance of fishing waters.

A resolution was approved commending farmers of Pennsylvania for feeding game this winter, a copy of such resolution to be sent to the Master of the State Grange.

That the Department of Public Instruction be asked to make the study of wildlife conservation a regular part of the curriculum of the schools of Pennsylvania.

That the Fish Commission be given the same discretionary powers now imposed upon the Game Commission.

That all CCC roads be closed during the hunting season.

That the CCC camps add a food planting program to their present coservation activities.

That the Game Commission devise some better method of issuing resident hunters' licenses so that this privilege will not be abused.

That the Game Commission and Fish Commission secure some agreement whereby hunting and fishing will be permitted on the Tobyhanna Military Reservation without the necessity of any other permit than the hunting and fishing license.

Commended O. M. Deibler, Fish Commissioner, for his splendid work and asked Governor Earle that he be retained.

Commending Governor Earle for his efforts to keep politics out of the Fish and Game Commissions, and congratulating him on the appointment of Grover C. Ladner as a Deputy Attorney General to handle the conservation problems of Pennsylvania.

Resolutions disapproved follow:

That fishing between the hours of 10 P. M. and 4 A. M. be prohibited.

Resolutions tabled or referred:

After considerable discussion of the Sunday Fishing problem, the matter was finally tabled for consideration next year.

A resolution to increase the hunters' license fee $.50 was referred back to the clubs for consideration.

That the system, under which the Pennsylvania Federation of Sportsmen operates was adopted by the North American Wildlife Conference, is a splendid testimony to Pennsylvania sportsmen.

The State conservation agencies, recognizing the value of such a cooperative unit, pledged their aid in making it fully operative in every county of the State.

ATTENTION—CENTRAL PENNSYLVANIA ANGLERS

The New Cumberland Sportsmen's Association is sponsoring a Smoker for Central Pennsylvania sportsmen, to be held at eight P. M., Wednesday, March 25, at the Citizens Hose Co., Fourth St. New Cumberland. Kenneth A. Reid, noted angler, writer, and a member of the Board of Fish Commissioners, will be one of the principal speakers of the evening. All sportsmen interested in fishing, hunting, and the conservation of fish and game are cordially invited (Admission free).

PENNSYLVANIA REPRESENTED AT DERN-LONERGAN HEARING

When the hearing on Senator Augustine Lonergan's Pure Stream Bill, No. 3958 convened at 10:00 A. M. Wednesday, February 26, before the sub-committee of the Committee on Commerce, consisting of Senators Caraway, Gibson and Guffey, advocates of pure streams from Pennsylvania were there in force. Representing the state of Pennsylvania in support of the bill were Honorable Grover C. Ladner, Deputy Attorney General, Dr. Edith MacBride-Dexter, Secretary of Health, Honorable Thomas C. Buchanan, Secretary of Forests and Waters, and Kenneth A. Reid, Member of the Fish Commission.

The first to be heard in support of the bill was Senator Lonergan, its author, who gave the history of the intensive study by nationally known experts beginning officially with the calling of the "Dern-Lonergan Conference" before the Secretary of War in December, 1934, the report of the Water Pollution Committee of the National Resources Board and other data that formed the foundation for the draft of the present bill.

Following Senator Lonergan, Mr. Ladner read and explained the bill, paragraph by paragraph, and answered questions from the Senate Committee and others concerning its legal phases and interpretation. Senator Gibson asked a number of pertinent questions which were answered by Mr. Ladner for the clarification of the record, and Senator Guffey of Pennsylvania displayed real interest and enthusiasm in the successful progress of the bill.

Following this discussion of the bill, Secretary Dexter and Secretary Buchanan were called on for supporting testimony. Secretary Dexter stressed the necessity for such legislation from the public health angle, while Secretary Buchanan covered some parts of the economic and recreational phases.

Commissioner Reid reviewed the sad history of local and state efforts to cope with the pollution problem, pointing out the fact that, "Legislative history in Pennsylvania shows that for more than fifty years that practically every session has had a pure streams bill, but that in every case such bills have always been defeated, and always by the same group and by the same argument—namely that the passage of such a bill would penalize Pennsylvania industry and put it at a competitive disadvantage with industries of other states. Regardless of the merit of such an argument—and it has some merit—we must admit that it has been eminently successful."

Contrasting the Federal plan with these state bills, Commissioner Reid said: "The eminently successful argument of competitive disadvantage immediately evaporates into thin air. All industries are placed on a level competitive basis that is eminently fair to all, and such inequalities as may now exist by reason of one state having certain restrictions on pollution which another does not have, are eliminated. Mr. Reid further pointed out that human nature is not altruistic when it comes to digging down into the pocketbook to correct pollution which does not adversely affect the party in question, but others below in the same watershed, and for this reason, the attempts to get action by voluntary means have been notable for their lack of accomplishment.

"Any plan to accomplish really worthwhile results must be mandatory," said Mr. Reid, "for even in cases where nine out of ten of the polluters on any given stream may be willing to take care of their wastes to clean up that stream, there is always a tenth one that refuses to do anything, and his refusal usually results in none of them doing anything. Pollution control must be mandatory, but it must be uniform and fair to all. These are the three cardinal principles that are embodied in the present bill."

The control of the Interstate Commerce Commission over railroads, the War Department over navigation, the Department of Agriculture over animal and plant quarantines and over migratory birds, the "G Men" of the Department of Justice and other examples of Federal regulation were cited by Mr. Reid as precedents for the proposed control over pollution. "It is entirely possible," said Mr. Reid, "for a man to stop a train at a state boundary, a criminal, or diseased animals or plants, but no man or group of men can stop a river from following the fundamental law of gravity, and when gravity decrees that it shall flow from one state into another, it does just that and carries its load of pollution to the unfortunate people in the adjoining state below who are powerless to do anything about it." With the single exception of migratory birds none of these problems so clearly demands Federal control on a national basis as the water of a running stream that is here today and in another state tomorrow

"If there is any subject under the sun that has been investigated to death it is water pollution. If the voluminous and varied reports that are now gathering dust in the files of the health departments in most of the 48 states and in an unremembered number of federal bureaus were only assembled and put to use in the next ten years. The time for preliminary study is past, the time for action is here; let us have no delays under the guise of further investigation and research until we make use of some of the tremendous investment that we have already made in this field."

The hearing was adjourned to be reconvened at the call of Senator Caraway, at which time the opponents of the bill will

be given an opportunity to be heard. "If the advocates of pure streams," said Mr. Reid, "do their part by letting the committee, and particularly our own Senator Guffey know that they are solidly behind this eminently fair bill, there is no reason why it should not be favorably reported on the floor of the Senate—and passed. It will also be advisable to contact your congressman, looking to the time when we hope the bill may be before that body. Here is the opportunity that we have been looking for. Do your part by acting; let your talk be directed to your senator and congressman—not confined to the home fireside."

HUNTINGDON ANGLERS WIN FISH PRIZES

From Howard Shilling, member of the Huntingdon County Game, Fish and Forestry Association, comes the following announcement of prize winners in the fishing contest conducted last year by this active central Pennsylvania sportsmen's group. Writes Howard:

"The Huntingdon County Game, Fish and Forestry Association recently awarded prizes to the club's 'champion fishermen' for the 1935 season. The awards for the longest black bass went to Harry Miller and Harry Salyards, both of Huntingdon. These two men each entered bass 21½ inches long. In as much as the Contest Committee offered duplicate prizes for ties, each fisherman received a $17 fly rod.

In the pike and pickerel class John Gipple of Huntingdon took the award of a $17 split bamboo casting rod for a pickerel 21⅝ inches long.

"Harry W. Koch of Huntingdon, entering the longest fish in all classes, received the award in the wall-eyed pike class with a 25⅝ inch wall-eyed pike. Mr. Koch received a $17 fly rod for his record fish.

"Mr. Gipple also received the prize for the longest calico bass which measured 13 inches, the award was a $2.50 casting line and a $1.50 weedless bait.

"The Association also gave prizes at the close of the trout season for the longest trout in two classifications — brook and brown."

OLD TOWN SPORTSMEN STAGE MEMBERSHIP DRIVE

The following announcement concerning a drive for membership in the Old Town Sportsmen's Association has been received from J. F. Livingston, prominent Clearfield sportsman:

"Many sportsmen in Clearfield and vicinity have asked, "Just how do I join the Old Town Sportsmen's Association?"

"In order to make it easy for interested sportsmen to become a member of the association, the association has placed in Dufton's hardware store and the Heldmold and Stewart insurance office, membership cards for the year 1936. These cards are already signed and the clerks at both the business places will gladly fill out your membership card. The cost of membership is 25 cents a year.

"Membership in the Old Town Sportsmen's Association also includes membership in the Clearfield County Federation of Sportsmen's Clubs and State of Pennsylvania Federation of Sportsmen's Clubs, because the Old Town Sportsmen's Association is a member in good standing in both of these federations.

"Possibly you are an individual who will put off stopping in one of the stores and obtaining your membership card. If this is the case, and you are interested, you can obtain membership from any one of the members of the membership committee or call J. F. Livingston at 408-M and he will be glad to get you a card, and also handle your subscription to either the PENNSYLVANIA ANGLER or the *Pennsylvania Game News* at no additional cost, each are 50 cents per year."

Always take the natives' advice as to living conditions and avoid sickness. They have learned by experience and experience may be costly to you.

The bite of a watersnake is not dangerous, but it is always advisable to sterilize the wound with a good antiseptic to prevent later infection.

Don't eat too heavily before a hard tramp or climb.

Reason for the Grin, We'd Say. Dr. Richards Hoffman, Bellefonte, Shows You a 19½-inch Brown Trout Taken in Bald Eagle Creek. And He was Using a 3-X Tippet.

Judd Turner Named Deputy Game Secretary

Of those who have come to Harrisburg in the capacity of a State official, few have finer background and wider experience than Judd C. Turner, who has been made assistant in the Game Commission to Seth Gordon.

Judd has for many years been active in conservation work in northwestern Pennsylvania. Rarely activities where actual effort was required took place in the northwestern section of the State without Judd Turner being present and taking an aggressive part.

Judd has always been one of the type of sportsmen who were never very long on talk, but mighty strong in action; and in sportsmen's affairs, as in every other walk of life, works speak louder than words.

The Fish Commission extends to Judd a most hearty welcome and feels assured of his success amid his very pleasant and congenial surroundings.

DON'TS FOR ANGLERS

At a recent meeting, the Lancaster County Fish and Game Protective Association adopted the following code of "Don'ts" for fishermen, according to Ira E. Mellinger, president:

Don't forget supply of clothing for real chilly fishing.

Don't forget your license and have it signed.

Don't forget carefulness on the highways to the streams.

Don't forget to ask permission to fish if lands are posted.

Don't forget respect of property rights that land owners grant for your pleasure.

Don't forget and leave part of fishing tackle and bait behind.

Don't forget to show your organization card as evidence of a trustworthy fisherman and identity with your going into questionable fishing waters, or when meeting land owners' objections to fishermen.

Don't forget you will not catch many trout if waters are clear and fishermen angle from both sides of stream, or opposite each other.

Don't think you can walk anywhere in the streams, but stay in the middle if you wade and wish to catch fish.

Don't forget to keep as far away from the water as will permit a properly cast line whether dead or to float, if you fish from the banks.

Don't forget the little trout will grow big, so treat it with this view in mind and return those undersize to the streams, by first wetting your hands.

Don't forget to observe the limit and undersize fish laws, nor fail to realize that fish wardens with naked eyes and field glasses are very liable to apprehend such violators.

Don't forget that providence best rewards the law abiding fishermen.

Never ford a mountain stream more than knee deep until you know what the water is like immediately downstream.

Pickerel have not been artificially propagated in Pennsylvania.

"Big Bill," 30-inch, 12-pound Brown Trout Removed Last Year from Tyrone's Big Spring

ARE FISH COLOR BLIND? CONSIDER THESE FACTS

Considerable comment, pro and con, has followed publication of the assertion that fish are color blind. To the practical fisherman, this statement does not run in accord with his experience in fishing. He knows, for instance, that on certain days trout will rise to a fly of one color while at other times, an entirely different color combination is the only one that works.

The following facts regarding the tendencies of fish to perceive colors have been gathered at our hatcheries. From tests that have been made and from observing fish over a period of many years, we have no reason to believe that they are color blind.

Tests have been made in feeding trout entirely on sheep lights, red in color, for a period of from eight to ten weeks. After the fish had become accustomed to feeding on food of this color, they would hesitate before striking an object of a different color, but would readily strike at a fly, piece of red flannel or any other small object of similar color.

In removing baby catfish from the nests, they are readily collected on the traps made of black twine. If white, yellow or red twine is used they pass around the trap.

A number of different species of fishes take on high coloration during breeding season. We believe that this characteristic is given to them for the sole purpose of attracting the opposite sex. If these fishes could not distinguish color, there would be no object in nature endowing them with this characteristic.

Color blindness is usually defined as the lack of ability to see certain shades and colors. This lack of ability varies with the individual.

In the human race those affected are more apt to be color blind to red or green. Fish may be blind to certain colors or shades but from what knowledge we have, we do not believe this to be the case.

HERE AND THERE IN ANGLERDOM

DID SOMEONE SAY TROUT? NOT THIS SUCKER FISHERMAN

Jake Motter of Harrisburg is a dyed-in-the-wool sucker fisherman. And if you doubt this, talk it over with Jake who will take suckers any time in preference to trout. Even January fishing on his favorite stream, the Yellow Breeches in Cumberland County, has yielded some good catches. For instance, on January 10. he caught a 19-inch sucker weighing three and one-half pounds.

Last spring, when trout season opened, Jake's brother persuaded him to give up his first fishing love on opening day and try for trout. Plenty of trout fishing but no trout nestled in his creel when he returned home. Next day, he swung back to the suckers, caught five big ones, two 19 inches, two 17 and one 15. But that wasn't all. Not by a darn sight. Jake added to his sucker string a beautiful brown trout, 18 inches in length.

It all goes to prove, he maintains, that a sucker fisherman must have more skill than a trout fisherman. If you don't believe this, just try to convince him otherwise.

Don Finley of Warren Caught This 25-inch, 4 pounds, 14 ounces, Brown Trout in Kingua Creek Last Season

According to Warden J. H. Simmons, a four-pound trout was taken on one of the streams in Lawrence County last season by Thomas Elliot of New Castle. Just what stream produced it is not known.

Writes A. B. Keffer, special warden, of Grove City: "Here's a true snake and fish experience of the writer and his pal, E. R. Uber. About the first of June last year, we were fishing on Little Sandy Creek in Mercer County. We caught six catfish and killed 14 watersnakes. About five days later we were there again, and this time we caught five catfish, killing 24 snakes. It was a dark day and I was sitting on a log by the edge of the creek. I began to peel off the bark of the log and under this bark found snakes. Killed seven snakes in that one log. These snakes were all killed in a distance of about 200 yards along the creek. We think we saved many small fish by killing them."

One of the most ardent conservationists in Central Pennsylvania is C. A. Kniss, publisher of the *Mifflinburg Telegraph*. Recently he wrote in *Sport-O-Grams*, a sportsman's column in that paper: "The Fish Commission has a new slogan, 'If you would catch more fish, kill less!' Perhaps this would be more readily understandable if it read 'If you want to catch more fish, kill less fish.'

"The idea is simple. Fish can be caught over and over again. Therefore if you catch a fish and carefully remove the hook, and then instead of killing it, put it back in the stream, that same fish can be caught again. * * * If we are to continue to have fish in our streams and fishing is to improve, we certainly must kill less fish."

From S. Dale Furst, Jr., Williamsport attorney and sportsman, comes the following interesting report concerning a watersnake: "While fishing in Black's Creek on the property of the Texas and Blockhouse Rod and Gun Club on June 12, last season, Jimmy Wither had the misfortune to fall in while the flap of his basket was open and two trout fell out into the water beside a rock. When he collected himself and climbed out, he looked around for his fish and saw both. He picked up the larger trout, but when he started to pick up the smaller one, could find only the head sticking out from under a rock. He grabbed the head and pulled it out, pulling along with it a good size watersnake. He let go and yelled for Glynn Krise who was fishing near him, and they tilted the rock back and forth and scared out the watersnake. After hitting the snake with a rock, they secured the trout."

The Conoquenessing Creek furnished good fishing for smallmouth bass last season, according to J. H. Bergman, special warden of Butler. C. E. Inian of Evans City caught five smallmouths one day that averaged 12 inches in length. Ralph Williams took four ranging in length from 11 to 12 inches.

According to Warden George Cross of Hammersley Fork, the largest trout taken in the Kettle Creek area last season was caught by Irvin Ruhl of Tylersville. He landed a brownie measuring 22 inches in length and weighing 4 pounds 2 ounces. Several 14-inch brook trout were also reported from famous Kettle Creek last season.

Nick Ratamess, special warden of Berwick, reports fine fishing for trout last season on Fishing Creek, Columbia County. According to Nick, a nice creel of brookies was taken in that stream early in the season by Joe Marscino of Berwick. They ranged from 7 to 10 inches in length. Bill Ridall of Berwick scored with a brown trout measuring 21½ inches. Anthony Randone, Wilkes-Barre, caught 10 brook and brown trout, 8 to 14 inches in length, on wet flies.

Piney Creek in Blair County, an improved stream, also yielded some dandy catches last year, writes Warden Link Lender of Bellwood. Jack Cemate of Ganister scored with a 17-inch brown trout, Mike Lopit, Ganister, with a 19½-inch brownie, and Mike Squear, Ganister, with a 17½-inch brown. Mike Conrad and George Homsey, also of Ganister, made good first day catches on Piney.

Winter Scene on West Branch Creek, One of the Finest Trout Streams in Berks County

Mr. Angler—Look To The Future In Your Trout Fishing!

"If You Would Catch More Trout—

KILL LESS!"

PENNSYLVANIA ANGLER

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NOTE

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April, 1936

Stream Improvement in Pennsylvania and Its Results

An Address Before American Wild-life Conference, Washington, D. C. by Commissioner of Fisheries, O. M. Deibler

The subject of stream improvement, or stream farming, has become one of paramount importance. Especially is this true in the highly industrialized States of the east, where the fishermen have been observing, from year to year, the diminishing of their fishing waters at an alarming rate. At the same time it was noted that each year a heavier toll of fish life was being taken from our remaining available public waters. This loss of public streams that formerly afforded fishing has been brought about by three factors. First, and by far the most important, is the matter of pollution. In Pennsylvania, where we have two large coal basins, namely the anthracite field, which covers a large portion of northeastern Pennsylvania, and the bituminous region, which extends from the central part of the State, west and south to our borders. While industrial and municipal pollutions are serious, yet the mine drainage is even more threatening and affects approximately three-quarters of the mileage of our major streams.

Second in importance is the leasing, or purchasing, of many of our most worthwhile streams by private individuals and clubs, until today, one mile out of every seven on our trout waters in Pennsylvania is closed to public fishing.

The third factor is the posting against public fishing by individual owners. This has been brought about largely by the fishermen themselves, not the sportsmen. Shrinkage of fishable waters to less than one-quarter of what they formerly were, in addition to the ever-increasing number of fishermen, who today have more time and leisure to fish than at any other time in our history, has created an unusually heavy demand on the remaining waters that still offer any fishing.

Since 1930 in Pennsylvania we have been confronted with another situation that was so grave that the matter of stream improvement was most forcibly brought to our minds. I refer to the serious drought conditions through which we have passed during the past five years. During this period, previously never-failing springs and streams that had formerly carried a substantial flow and offered excellent protection to fish life, became dry or virtually dry, only little trickles and a few pools remaining. As an additional menace, our wardens and fishermen observed another threat to our various freshwater species of fishes, occasioned by great migrations of all types of fish predators. Never in the memory of our oldest anglers were so many watersnakes seen on our streams, nor had there been noted before such great numbers of fish-eating birds which had migrated to the State during the drought period. The white egret, for instance, which had rarely if ever been seen on our streams, was now observed in flocks numbering as many as two dozen birds. These egrets, with the blue heron, many types of bittern and other shorewading birds, found it easy, during low water periods, to feast on fish life which had little if any protection. Nature seems to have an amazing and unique system of communication or instinct whereby information of this kind is broadcast among predatory birds and animals.

The Board of Fish Commissioners in 1931 started an extensive and comprehensive survey of the waters of our Commonwealth. This was forced upon us by the necessity of finding suitable waters in which to plant fish which we then had in our rearing ponds, as many streams that were formerly stocked were now in no condition to be stocked. After the first reports of our field men came in, we found, very much to our surprise, that we were receiving a great deal of information which had not been anticipated when the survey was first ordered. This survey was carried on for four years, until we had completed by watersheds the whole water system of the State. It furnished us with a comprehensive picture, for the first time, of the exact mileage of polluted waters, waters which had been closed to the public for fishing, and acreage of our ponds and lakes. The survey likewise furnished us with first-hand authentic information as to the various species of fishes best adapted to waters throughout the State. However, some of the results of this survey were most alarming and brought to the sportsmen, for the first time, the necessity for carefully guarding and protecting the few remaining miles of clean waters we still had. Yet the facts reveal that for each mile of stream still suitable for support of fish life, we had approximately four and one-half miles of water so highly polluted that no type of aquatic life could exist in it. These facts also reveal to us the astounding fact that should our anglers all go astream on the same day, available fishing waters would be so congested that each fisherman would have available only ninety feet of stream as his territory.

With these figures before us we were faced with a problem somewhat similar to that of the farmer during the postwar period when the demand for foodstuffs was greater than the supply, and the Federal Government asked farmers to farm more intensively, so that they could make two blades of grass grow where one grew before. With the picture outline before us and the ever-increasing demand on our streams and decreased waters, we were compelled to face the problem of more intensive farming of our streams, or in other words the necessity of increasing their productivity by making it possible for several fish to grow where only one grew before.

Until the spring of 1933, very little practical stream improvement work had been carried on anywhere on streams of similar nature to that of our swift flowing streams in the mountains of Pennsylvania. However, we learned of excellent results that were obtained on the Neversink River, in New York, by Edward R. Hewitt, who had accomplished the very thing that we were anxious to put across. After visiting this project and gaining what information we could, this gave us a starting point. Our Board decided that, in their opinion, the most practical way in which to put over this program and to have the

(Please turn to page 14)

Bucktail and Streamer Fishing

By CHAS. M. WETZEL

DURING the past decade, bucktails and streamer flies have so increased in popularity among anglers—that it is seldom, indeed, that one encounters a fisherman who does not possess a few of these lures. Tied in a wide variety of patterns, on hooks varying from number four or larger size to number ten, these flies have proven their worth as takers of large brown trout and thus their popularity is well deserved. In appearance they bear no resemblance to any insect, yet when retrieved through the water, the striking similarity to a minnow is most pronounced. Whether the trout take them as such is problematical—we have no way of knowing—but this seems to be the general opinion among fishermen.

Due to their large size, these flies are easy to tie—and the money saved by doing so represents quite an item, particularly among some fisherman who must obtain every new lure that appears on the market. There are no doubt many anglers who have ambitions to tie a trout fly, yet when they look at some of the small creations turned out, they feel that it would prove an impossible task. For those that maintain their fingers are all "thumbs"—and who have neither the time to spend nor money to buy equipment—I have endeavored to give a brief, simple description of tying a streamer fly—using only such materials as one can conveniently find around home. Naturally the fly will be crude—it could not be otherwise, considering we are starting from "scratch"—but it will catch fish and that after all is our objective.

What we will require is a long shanked hook, a few feet of waxed tying silk or thread, some shellac, a piece of silver tinsel, a strand of black wool and a few feathers from the neck of a chicken, or as an alternate, hair from the tail of a deer or squirrel.

To prevent the body from turning, shellac the shank of the hook and prepare a foundation by spirally winding thread around it, similar to the method illustrated in Fig. 1.

When the shellac has dried—start winding the tying silk near the bend of the hook, winding over its own end and binding down the tail, black wool body material and silver tinsel, with a few firm turns. Bring the tying silk forward towards the eye of the hook and if it has been well waxed it will adhere to the shank without loosening. Fig. 2 illustrates the fly at this stage.

From the body of the fly by winding the black wool strand around the hook and fastening it near the eye with a few turns of the tying silk. Clip off the excess end of the wool strand, see Fig. 3.

Spirally wind on the tinsel in even uniform spaces, reversing the direction from which the body material was wound on and fastening near the eye with a few turns of the tying silk. Cut off the projecting end of the tinsel. The construction of the fly up to this point is illustrated in Fig. 4.

Take two or three hackles or neck feathers of the chicken and tie them in at the root, in the position shown in Fig. 5. On the sketch I have designated these hackles as badger (black or brown center with white or creamy edges since this color works unusually well with the black body of the fly. However this is a relatively unimportant feature for hackle of other color, would no doubt prove equally successful.

It finally remains to fashion off the fly. Take a number of turns back of the eye with the tying silk to further secure the hackle and to form the head. Ordinarily the fly is fashioned off with the fly tyer's knot, known as the whip finish—this I have described in detail in a former issue of the ANGLER. As many anglers find this knot rather difficult to tie—four or five half hitches similar to that illustrated in detail "A," will secure the end of the tying silk and prevent it from loosening. Cut off the end of the tying silk and coat well the head of the fly with shellac, especially if half hitches are used.

The fly is now finished unless an eye is desired, similar to that illustrated in Fig. 6. This is commonly painted on with enamel, the finished head is first given an over-all coat; next a small circular spot is painted on each side of the head and finally in the center of these circular spots a small eye is painted. Naturally enamel of different colors should be used in forming the eye of the fly.

As I mentioned before, streamers and bucktails are tied in a wide variety of patterns and the majority of them seem to catch trout. Figs. 7, 8 and 9 are typical of many used on our streams today. The small feathers tied in at the shoulder in Figs. 7 and 9 are those of a jungle cock—and they appear to add considerably to the effectiveness of the flies. A favorite of mine is shown in Fig. 8. The body is constructed of embossed silver tinsel; hair is of bucktail, brown above and white underneath—while the tip of a small yellow hackle is tied in for the tail.

It is almost universally agreed upon that large brown trout feed mostly during the night or immediately after a rain which raises the stream to a higher level. The reason for this is more or less obvious, for under the protective mantle of darkness or discolored water, the inherently shy brown trout boldly sets forth on his foraging trip, secure in the knowledge that his movements are unobserved and that he can approach his prey with a minimum of exertion. In this trait they are similar to human beings—some would say fishermen, having in mind certain brothers of the angle notorious for their laziness; be that as it may, the stigma attached to the craft is rapidly disappearing. Also during high water angle-worms are washed down into the streams and these together with insect larvae, nymphs, crustaceans, mollusca, etc.—bring out the smaller fish, which in turn are preyed upon by the roving brown trout. It follows then: that the ideal or most propitious time for fishing bucktails and streams would be after nightfall, or immediately following a heavy rain. During the early part of the season, at a time when wet and dry flies are practically ignored, these lures have accounted for many fish.

Certain peculiar characteristics that trout display toward bucktails have been noted by all anglers who have used them for any length of time. This is a tendency they display in rising short of the lure. I have observed that this occurs more frequently when fishing downstream and is, I believe, more often due to the inability of the trout to seize the lure—than to a refusal at the last moment. However, this is more or less conjectural, but it seems reasonable to believe that with the angler retrieving the fly upstream and the current pulling and tugging the lure in various cross directions—it is no simple matter for the trout to seize the fly. Rises of this sort are usually of a slashing nature, the object being to first stun the minnow—and quite frequently the trout is hooked foul by the angler who struck at the first flash of the fish. The remedy then is to delay the strike just a trifle, giving the trout an opportunity to seize the lure after it is borne down under the vicious attack.

Probably still more important than the timing of the strike is the method in retrieving the lure. On various occasions, when the streams were clear, I have had the opportunity of viewing the reaction of trout to bucktails as they were worked in different ways through the water, but the result of these studies proved more or less disappointing. It was impossible to forecast what the fish would do next. On the whole, far from being stupid as some fishermen claim, trout possess a degree of caution and restraint, unequalled in any other fish—that is what makes the sport so facinating.

In general bucktails and streamers are fished near the surface about a foot or two under the water, yet at times it is necessary to go deeper especially when the trout are hovering near the bottom. This extra depth is affected by means of a split-shot sinker attached to the leader directly above the lure. It is also quite commonly employed when fishing swift water, where the bucktail has an annoying habit of keeping close to the surface.

Figures 10, 11 and 12 represent various ways of retrieving the lure through the water. All of them are successful, but none are to be considered the only way of fishing bucktails. Almost every angler has developed a technique entirely his own, and these different methods are all well worth cultivating for as I have mentioned before, trout are cautious and temperamental and one must be constantly experimenting in order to turn failure into success.

One of the most common methods employed is that illustrated in Fig. 10. The lure is retrieved through the water in a series of jerks, each approximating four to five feet in length, alternating each one with a brief pause that causes the lure to sink deeper into the water before its journey is again resumed.

A longitudinal section through a creek with water flowing towards the left is illustrated in Fig. 11. Downstream casts like

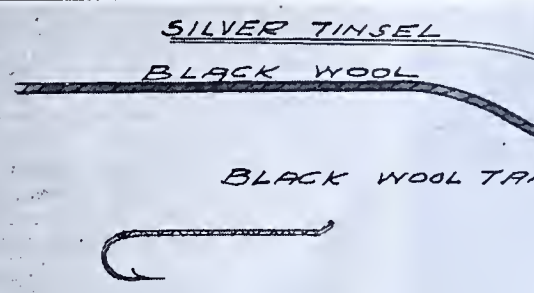

FIG. 1.

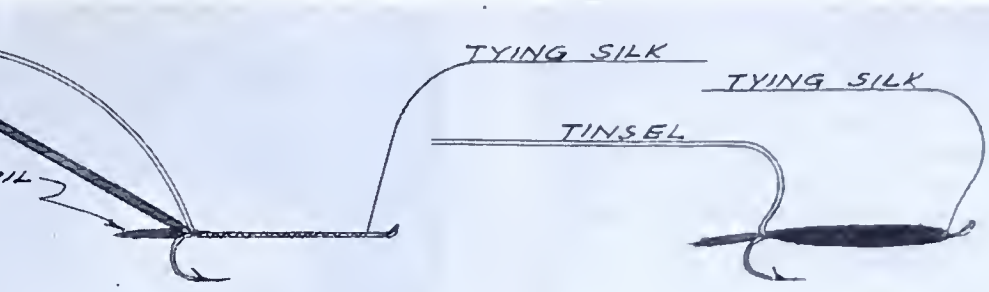

FIG. 2.

FIG. 3.

FIG. 4.

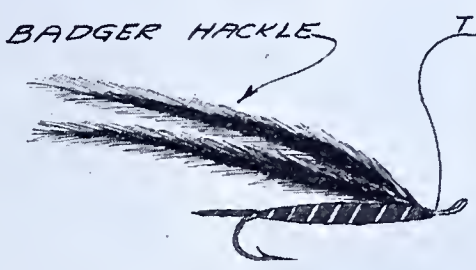

FIG. 5.

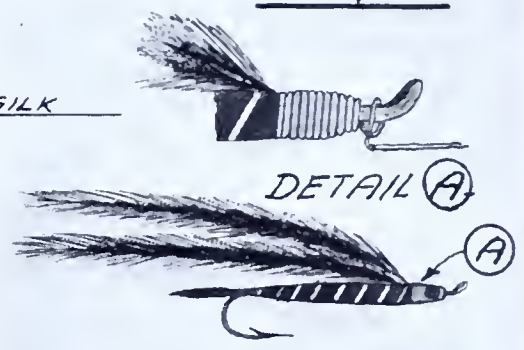

FIG. 6.

FIG. 7.

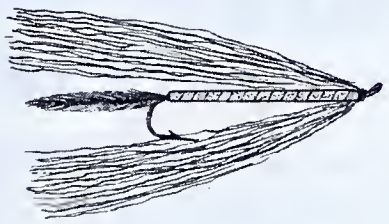

FIG. 8.

FIG. 9.

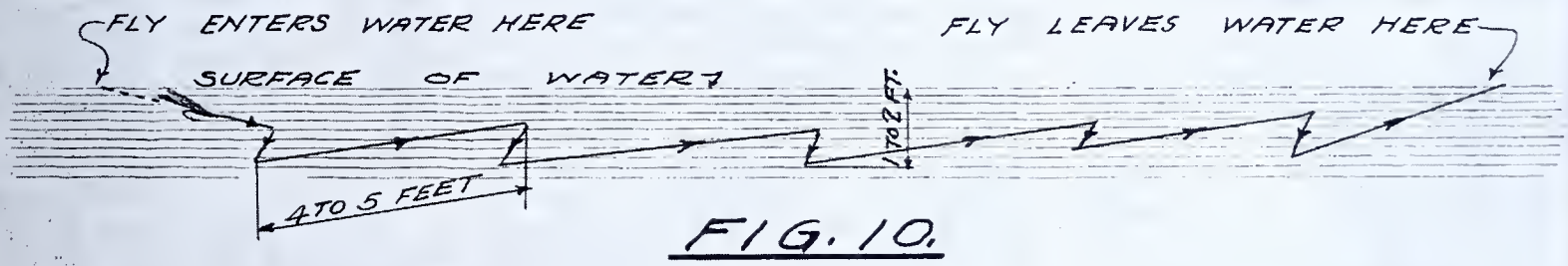

FIG. 10.

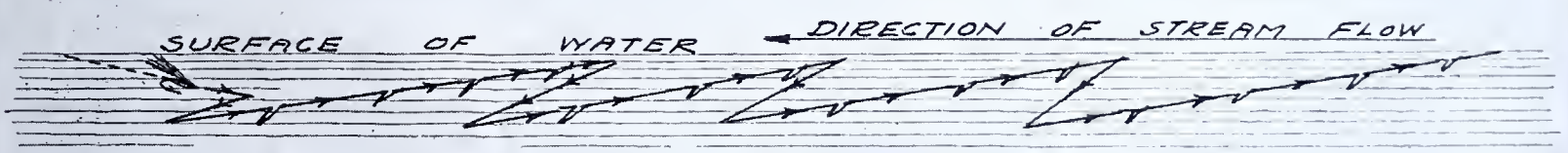

FIG. 11.

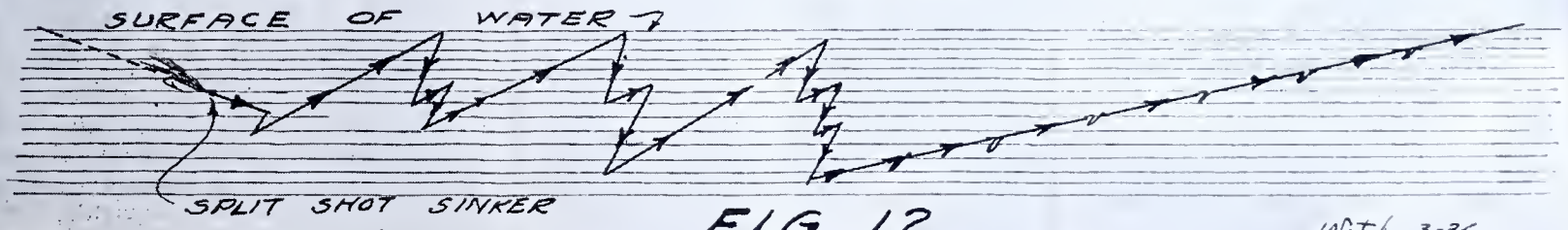

FIG. 12.

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this one are productive of many rises but the percentage of hooked fish is small, no doubt due to the reasons I have mentioned before. As is usual in streamer fishing, start the lure moving the instant it touches the water—jerk it upstream a few feet—allow the current to carry it back—then retrieve in a series of movements similar to that shown in the sketch. The broken and uneven course of the fly as it is being worked upstream, is obtained by a trembling motion of the rod tip, similar to that which would be produced by a person afflicted with "palsy."

I have probably caught more trout by the method shown in Fig. 12, than in any other way, so naturally I am rather partial to it. Ordinarily the cast is made diagonally upstream and at a spot where the fish are presumed to be lying. The lure is worked rather deep in the water as shown. A series of swift erratic jerks are then made which will ordinarily cause the trout to mill excitedly around. Now with their interest centered on the lure, retrieve the bucktail toward the surface either with the quivering method outlined above or by a straight continuous pull. It is well to remove the fly from the water some distance away from you, in order that the trout will not be alarmed by your presence. This has been forcibly brought home to me on more than one occasion, when trout pursuing the bucktail darted off into deeper water just at the time when a strike appeared imminent.

In general the methods and principles outlined above should serve as a foundation in fishing bucktails and streamers. Learn to construct your own lures; study various methods of retrieving and moreover, catch your trout the gentlemanly way, on a fly—even though it happens to be a bucktail.

SPRING FEVER

I have spring fever—
I can't be cured until it's time
To unpack eobwebbed reel and line—
'Cause I've got spring fever.

I've got it bad—
And till I've gone and tried the stream
I'll sit all day in pensive dream
'Cause I've got spring fever.

It's taken hold....
That yearly malady of men who yearn
For spring to have it's welcome turn,
And fish to come from 'neath the banks
And give the line those thrilling yanks
Has its hold again.

I know I've had my fun before
But I ain't cussed since '34!
I haven't thrilled to open skies
And haven't watched the dragon flies
Since last the ice was off the stream
And I began this pensive dream.

The only cure is that 15th day
That seems so doggone far away.
—Donald J. Anderson

The fin immediately back of the gills (pectoral fin) of the brook trout when worked through the water the same as a bucktail is often a very productive lure for other trout.

APPOINTED BOARD MEMBER

With appointment of Samuel J. Truscott of Dalton, Lackawanna County, to the Board of Fish Commissioners by Governor George H. Earle, northeastern Pennsylvania, famous for its fishing lakes, streams and ponds, is again represented on the Board. Mr. Truscott succeeds Leslie W. Seylar, McConnellsburg, resigned.

Intensely interested in fishing, particularly trolling and skittering for pickerel, he has indulged in his favorite sport for many years. Each summer, Mr. Truscott and his family vacation at their cottage at Promised Land, and Mrs. Truscott also is an ardent angler.

The Board member has been active for a long time in sportsmen's affairs in northeastern Pennsylvania and also is interested in Boy Scout work. He is a member of the Masonic organization and also active in the Independent Order of Odd Fellows. He is affiliated with the Clarks Summit sportsmen.

It should be of interest to ANGLER readers that last year he caught a yellow perch in Promised Land that measured 16½ inches in length. Incidentally this perch was the largest reported last season from the lake.

The Evolution of the Fish Commission

By HARRY SHAWKEY, Warren

REFERRING to Mr. O. M. Deibler's editorial article in PENNSYLVANIA ANGLER for February, 1936, "More Forage Fish—More Game Fish," I submit the following figures in support of the Fish Commission's efforts. Game fish have been increasing in number, and the present conditions are enticing more anglers to the streams. The work of the Commission has truly made for better fishing, irrespective of the increase in the number of fishermen. For the past twenty years, my average kill was seventeen bass per year. All bass were caught on artificial bait, 85% on flies, barbless hooks. The record of my catch for the past twenty years is as follows:

Year		*Year*	
1916	358 bass	1926	158 bass
1917	79 bass	1927	107 bass
1918	68 bass	1928	182 bass
1919	166 bass	1929	197 bass
1920	269 bass	1930	510 bass
1921	216 bass	1931	583 bass
1922	505 bass	1932	843 bass
1923	243 bass	1933	878 bass
1924	179 bass	1934	1222 bass
1925	68 bass	1935	1250 bass
		Total	8081 bass

To my mind, the above record conclusively reveals the splendid cooperation of the Fish Commission in making fishing a worth-while and remunerative sport.

WHY MARCH ANGLER WAS DELAYED

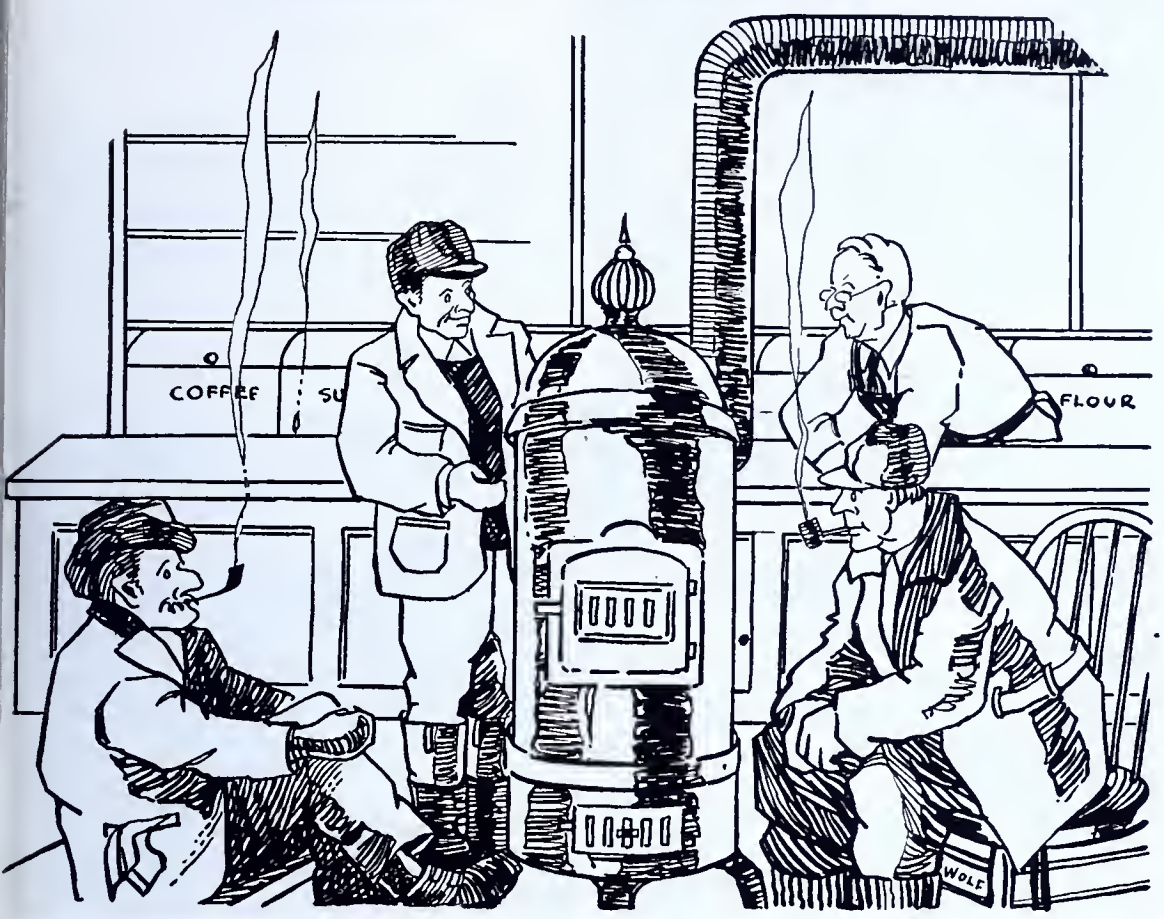
We regret very much that subscribers did not receive their March issue of the PENNSYLVANIA ANGLER on time. Circumstances over which the staff had no control caused this delay. Owing to difficulties at the plant that prints the ANGLER, the issue was unavoidably held up. Future issues, however, should reach you shortly after the 15th day of each month, which is set as our regular publication date.

THE FRONT COVER

The ANGLER takes pride this month in presenting another magnificent photo by LaMar Mumbar of Pennsburg, this time a view of Raymondskill Falls in Pike county, which serves as a background for our front cover. And since rainbow trout are lovers of just this type of water, we display a two-pound rainbow, lower right, taken last year, on a No. 16 Ginger Quill fanwing.

The Stove Pipe League

By DONALD J. ANDERSON



Old Charley followed a gust of wind into the corner store. The tobacco smoke danced merrily and then faded until the door was closed and it could hang in mid-air again. It was when the smoke again was thick that the fellows began the evening yarns. There were five in the room, perched on orange crates and soap boxes. But Charley was the oldest, so he began.

"It was back in '98" he said, "and I was still livin' on a farm. A day like this, too. Stormy and cold. Well, I gets the fishin' idee in my head. You know in them days I hadn't met my wife and I went right when I took the notion. But when I asks Ben he says, 'What! Fishin' on a day like this? You'll freeze.'"

"Can you beat that, looking on a little cold when there's fishin' to be done? I says, 'Well, I'm agoin' fishin' and that's all there is to that. Goin' along?'"

"Ben shakes his head so I go home an' fetch my fishin' apparatus. The lake was only about a mile from the farm and it was alive with pickerel. Well, off I starts. And who should come sneakin' from behind the barn but old Ben hisself. 'I decided it warn't too cold anyway,' he says.

"But it war cold. The temperature was below zero. You know in those days it got much colder than now. The lake was froze thick and Ben slides on his rear afore we reaches our fishin' ground. Here we hatchets a hole in the ice and sits down to rig up our lines. It war so cold the lines was stiff. But we sits ourselves down in spite of the cold. (At this point, Old Charley whirled some tobacco juice toward the spittoon). By the way, boy's, don't tell the wife 'bout sittin' on the ice. She allus claims I got right sick from stuff like that an' I'd never hear the end of it.

"Well, I'm first to have everything rigged up. I drops my line in the water baited with angleworms I allus kept in a bucket back home. No more then I has it down when *zing!* and I had on a pickerel. I dumps him out on the ice and Ben drops his line. I tosses the fish on the ice and starts fishin' again. Ben he soon gets a bite but bein' too hasty he misses him. War a nice sized fish, too. Ben always did pull a mite soon.

"That was the start, boys. In a couple hours we catched ourselves somewhere in the thirty pickerel. These was big ones, too; all of eighteen inches, I'll bet. And we'd have caught more, too, but Ben's wife she comes dashin' aerost the ice.

"'Ye gods!' yells Ben and he scatters up the trail hell bent fer leather. The old battleax was a fat woman, nigh unto two hundred, I reckn, and Ben outrun her. But he leaves line and fish behind. Yeh, I can still see old Ben go. I swore as I watched him that if I'd ever git married I'd see that she warn't like old Ben's spouse. Don't tell the wife though, 'cause she and the battleax traveled together in their youth."

The gang applauded Charley's tale with laughter and Jake, the proprietor, received an order for a bag of pretzels. The bag was passed around and returned to the owner nearly empty.

While the pretzel nibbling was going on, Sam, our champion liar, got ready to unravel a yarn. Sam never heard of veracity. But if he tells a story make as if you believed it or he'll get sore, and he's a handy man with his dukes.

Sam begins:

"I and Joe Hanly—he's dead now, poor guy—went fishin' down along Perkiomen Creek once about five years ago. This was in the summer though. We come there so about six o'clock in the morning. Now at this place there was an old cuss of a farmer who always yanked me off his property. I decided to do some early morning fishin' there. So off I sneaks.

"It was pretty weedy along the creek and this cover I took advantage of. I came to my favorite hole and began casting around a protruding clump of bushes. My bait was out of sight.

"I don't believe I waited a minute for a bite. Something struck so hard I nearly dropped the pole. A bass, I thought, it must be a bass! My pole bent, my reel groaned.

"But just then I heard a yell. I turned. There was the old crab of a farmer himself, dashing down the lane towards me. I cussed that old reprobate thoroughly and determined that I'd get this fish if he lugged out his whole relation. So I began to reel with all my might.

"The farmer and the fish.....it was a race against time. And I won the battle. I pulled the fish around the bushes just before the farmer pulled up. But a furious flapping of wings and loud quacking told a different tale. I had one of the old geezer's ducks on the end of the line!

"'Holy smokes!' was all I could exclaim. But not so the farmer. He said plenty more. One of the things he said was for me to shell out ten bucks in a hurry. Which I did, gladly. And I hustled off his land never to return."

The laugh that followed (although a rather skeptical laugh) had hardly subsided when Jake said, "Listen."

We strained our ears. Out of the noise of the howling wind came a woman's voice. "Char-ley!"

Old Charley pulled up his ear muffler and had disappeared into the night in the twinkling of an eye. The rest of us smoked in silence a short time, then one by one we drifted home. Tomorrow night was another night for a session, and maybe old Charley could sneak away for a few hours, too.

CHESTER ANGLERS WIN PRIZES

At the annual banquet of the Chester County Rod and Gun Club, held in Coatesville in January, prizes were awarded for the largest bass taken during 1935 by members.

First prize in the largemouth division was taken by George Abbott of Honey Brook, Chester County. His bass weighed 5 pounds 12 ounces and was 21 inches in length. It was caught on live bait in the West Branch of the Brandywine Creek.

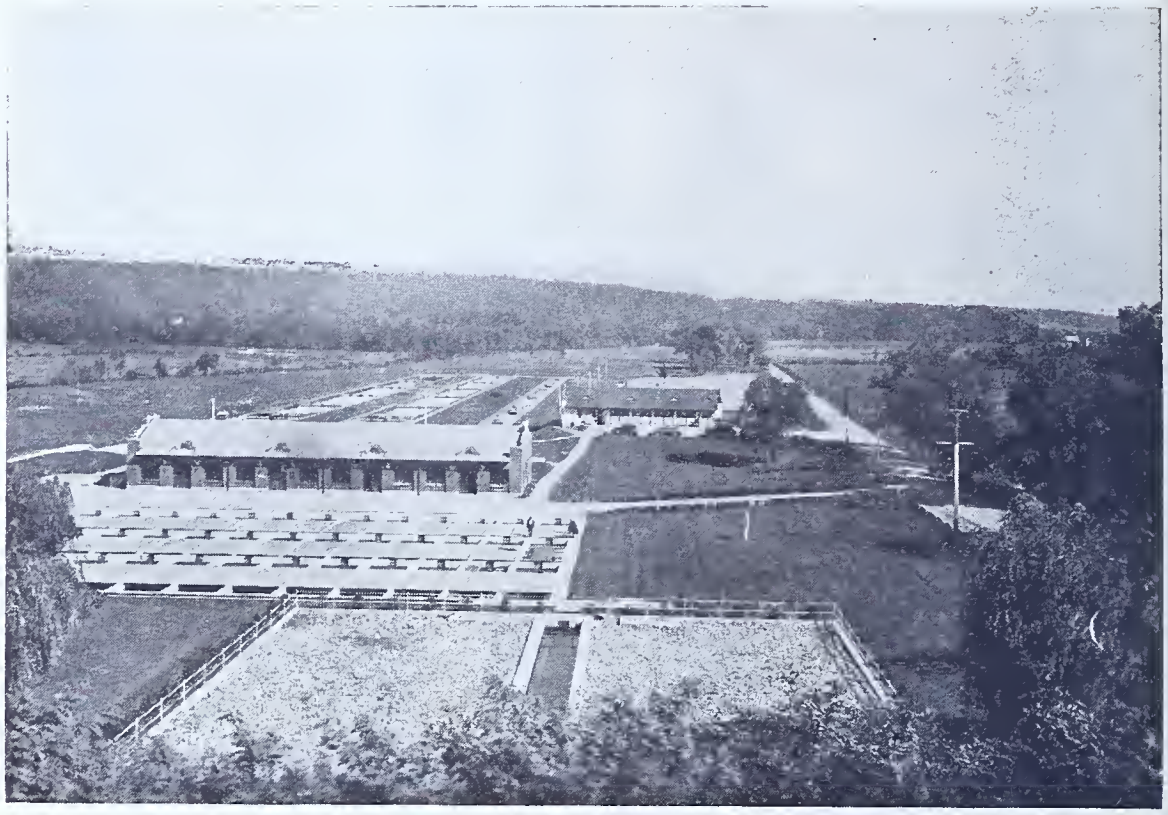
Mrs. Rhoda Yeates of Coatesville caught the largest smallmouth bass, a fish weighing 3 pounds 12 ounces, on a helgramite. It was taken in the East Branch of Octoraro Creek. Billy Pyle, 11, of Coatesville, caught the runner-up largemouth on a helgramite in the West Branch of the Brandywine Creek. It weighed two pounds.

Why Trout Hatcheries?

A Discussion of Natural Vs. Artificial Trout Propagation

By Alex P. Sweigart
Editor, Pennsylvania Angler

PENNSYLVANIA fishermen own a system of 10 major fish hatcheries, second to no other in the world. Of this hatchery chain, six—Corry in Erie County, Tionesta, Forest County, Reynoldsdale, Bedford County, Pleasant Mount, Wayne County, Bellefonte, Centre County, and Huntsdale, Cumberland County, are devoted wholly or in part to trout culture. They produced and distributed last year 755,441 brook trout from 6 to 12 inches in length, 410,961 brown trout, 6 to 12 inches, and 81,954 rainbow trout, 11 to 12 inches. Brook trout fingerlings released numbered 1,914,646, and brown trout fingerlings 77,014. Few of our fishermen, aware of the intensive fishing to which virtually all of our trout waters are subjected each year, will question the necessity of planting so many trout. We simply must face the fact that modern fishing conditions demand this heavy stream stocking with artificially produced fish. But let us delve more deeply; in other words, consider the basic elements that today are affecting our trout fishing. First we shall discuss:



One of Pennsylvania's Modern Trout Hatcheries—Reynoldsdale in Bedford County

Natural Reproduction in Trout Streams

Radical changes in practically all Pennsylvania trout waters have occurred during the past fifty years. We may list as contributing factors to these changes (1) the vast lumbering operations in the North Tier and other heavily wooded sections; (2) the draining of swamps and ditching of small tributary feeder streams to trout waters in agricultural sections to bring more farm land under cultivation, and (3) cutting of much stream side shore cover along meadow streams.

Prior to the era of intensive exploitation of natural resources, our major trout streams, and more important, their spring-fed tributaries, formed a marvelously regulated network of waters. The sponge-like floor of virgin timberlands absorbed winter's melting snowfall, serving as a vast natural reservoir from which moisture gradually seeped into streams and their sources. Their flow varied but slightly during the year, and to the feeder streams and headwaters came our native charr or brook trout on their annual spawning run. The brook trout eggs, deposited in October or November, occasionally hatched in the feeder brooks, where warm water prevailed during the winter months, in 40 days. In extreme instances, the hatching time required was 120 days.

Several other factors entered into the successful natural reproduction of trout during this era. Comparatively few anglers fished the larger waters in which the adult charr lived for virtually eleven and one-half months of the year. As a result, there was a better balance of the sexes. It is believed that in fly fishing, possibly three-quarters of all adult trout taken are male fish. The males generally are thought more aggressive in striking the fly than the comparatively timid female fish. In consequence, at spawning time in heavily fished waters today, the females may predominate. This simply means that many beds or redds are not fertilized, for, to spawn most effectively a male and female trout should be present at each redd.

A North Tier Trout Stream

Nature is a relentless mistress. Even under primitive conditions in Pennsylvania, only the strongest of the fry from each season's hatch managed to pull through. This code of survival of the fittest assured perpetuation in each stream of a strain of hardy brook trout. It is probable that not more than 25 per cent of the season hatch ever survived. In this way, the danger of over-population was avoided. Not only natural predators, the kingfisher, water-snake, heron, voracious larva of certain insects, and eel preyed on the baby trout. Larger brook trout, we believe, are just as cannibalistic as their cousins, the brown trout, and these mature fish, lying in wait as the young trout descended in May or June from nature's incubators, probably took heavy toll from the downward drifting fingerlings. Certain species of minnows, if present in the larger stream, also may have voraciously devoured the young of the charr. This loss in the season's hatch, however, was a delicately adjusted system in

which nature made herself felt in an amazingly efficient way. The population of adult fish, prime spawners and well balanced as to sexes, more than compensated in retaining a wilderness stream at its peak of trout production. In other words, any natural barriers that existed served to better rather than cripple its productiveness under the old order. Now let us turn to consideration of factors dominating natural reproduction of trout under modern conditions.

We know that the vast virgin forests of Penn's Woods have long since fallen before the advance of the sawmill. In many sections, they have been replaced by hardy second growth timber that each year must serve more effectively as a check to disastrous floods and spring freshets which annually sweep our streams. This mending process, however, is slow and must therefore be regarded as a means to gradual betterment in stream control in mountain areas.

In agricultural districts, radical changes have also occurred. Swamps have been drained, feeder spring brooks ditched and straightened to provide more land for cultivation. Meadow lands, in use commonly for pasture, were cleared of brush to provide more grazing area for livestock. Very often, the streamside brush, so vital as a source of shade, was thinned out or destroyed. We cannot minimize these changes, for, without doubt in many instances their effect on natural reproduction of trout has been even more serious than that affecting mountain waters.

Too often we fail to consider the vital part played in trout stream welfare by the low-lying alder swamps and bogs known and loved by the woodcock hunter. These swamps, it is true, are not usually valuable feeders of low temperature water for a trout stream. But, in numerous instances, they serve an equally vital purpose. Here are bred countless aquatic organisms upon which the baby trout and, on occasion, the larger fish may feed. A sudden shower,

Native Pennsylvanians—Charr or Brook Trout

raising them to overflowing, discharges into the stream great quantities of these organisms upon which the fish may gorge themselves. Not enough of the sluggish or stagnant water at such times is usually emptied into the stream to cause discomfort to the fish. This source of food supply may be regarded as a valuable asset to the forage in any meadow trout stream.

Frequently, the ditching and straightening not only of spring feeder streams but even smaller brooks in which charr or brook trout live may ruin them utterly. We have in mind a certain meadow stream, located in a central county, that was destroyed in this way. The stream, rising in a big limestone spring, cut its winding course for a distance of possibly one-half mile to its point of juncture with a warm water stream. Fifteen years ago, brook trout of ten inch length were commonly taken from it, and we recall one magnificent charr of fourteen inches. A man could easily step across this stream, but its under-cut banks and winding course provided just the environment necessary for highly colored brook trout. And then the brook's course was straightened. Its dark pools, swift, musical riffles and deep grass bedded shores were replaced by a straight channel, devoid of cover; open water from which no brook trout, to our knowledge, has since been taken.

Meadow trout streams in Pennsylvania are affected perhaps most adversely under present conditions by silt. This applies not only to the main streams but to the tributaries in which natural reproduction takes place. Violent rainstorms wash from cultivated lands bordering such streams immense quantities of fine top soil. While usually accompanied by a sharp rise in water flow that carried away some of this silt, portions of it settle on the rocks and pebbles to the detriment of trout in such a stream. Silt is one of the worst enemies to trout. In the feeder brooks where spawning takes place it sifts between pebbles, and later, when the eggs are hatching retards free flow of oxygen to them. Clinging to the eggs, it also may prove fatal to the trout embryo by setting up a process of decay and generating certain poisonous gases. In streams adversely affected by silt, installation of current deflectors to scour clean, through increased current, the rock and pebble beds so essential to trout welfare may prove advantageous. But the fact remains that in many of our meadow trout waters silt today is a major menace. Insofar as mountain waters are concerned, they too are subject to sharp fluctuation in flow but to a lesser degree are affected by infiltration of silt, owing to the type of territory they drain.

When we consider these adverse factors to trout welfare under modern conditions, some idea may be had of the difficulties under which natural reproduction must take place. Without exaggeration, it may be said that not more than 10 per cent., and in most instances even a smaller percentage of trout eggs are hatched on natural spawning grounds. This means that to continue to

Interior of Bellefonte Hatchery Building, Showing Hatching Troughs

provide good trout fishing in most Pennsylvania waters, heavy stocking from the hatcheries is necessary.

Artificial Trout Production

At the large modern hatcheries of the Fish Commission, nature's loss becomes a gain. The female fish, when ripe, are stripped of their eggs. Over these eggs is poured the milt of the male fish. Usually, through this method, above 90 per cent. of the eggs are fertilized. They are then placed on screens in the hatching troughs, and a steady, warm stream of water passes over them during the hatching period. Expert attendants constantly check on the eyed eggs, removing the unfertile ova, which turn white. The fertile eggs are usually a delicate pink in color.

The hatching time varies at different hatcheries and is regulated chiefly by the winter temperature of the water at these fish farms. At Huntsdale, Cumberland County, for instance, a hatchery fed by deep seated limestone springs having high winter temperature, the time required is about 40 days. At Pleasant Mount in Wayne County, 90 days is necessary.

After the fry have hatched they rest on these screens for varying periods of time absorbing the yolk sac. With disappearance of the umbilic sac or yolk, the baby fish start making short sallies into the current in the trough, and then feeding with finely ground sheep lights and liver is started.

Later, when the fry are transferred to outdoor ponds, they are graded frequently as to size and segregated in different ponds. Fed regularly each day, their development in length and girth is often amazing. Some are stocked while in the so-called fingerling stage, that is, when they have attained an average length of 2 inches. These fingerlings are hardy little fish, in the pink of condition, having been given every advantage during that critical period in the first stages of growth to which wild fish are subjected.

A Creel of Brook Trout

Stocking of trout over legal 6 inch size has without doubt been a vital factor in preserving Pennsylvania trouting. The legal size fish, when released in wild waters, are in splendid physical condition. Until they become acclimated to change in environment, the surplus flesh which has been accumulated under steady feeding serves them well and later, accustomed to increased current, they turn to feeding from the current just as do wild fish. These larger trout, if they survive the season, also undoubtedly take part in natural spawning.

There is little doubt that through the intensive stream improvement campaign now being carried on by the Works Progress Administration, natural conditions of trout waters in Pennsylvania will be bettered. The heavy snowfall during the past winter will also serve to improve natural environment through restoration of springs and underground streams.

Improved environment on our trout waters, backed by heavy production of brook, brown and rainbow trout in our hatcheries, should mean better trout fishing in the future for our fishermen.

Reckon I ain't seen so much water in our runs fer a long while back as there's been this year fer openin' o' the trout season. A right good thing, too, fer with more water, these here watersnakes can't raise sech merry ned with the trout as they done back when we hed them dry summers.

Well, sir, on openin' mornin' I was out o' bed afore our ole dominicky rooster hed started crowin' right. Day afore I hed got me some most mighty fine pine sawyers up back o' the old mill settin'. Seth he says he's not a givin' up red worms fer enny critter like one o' these white worms a feller finds in rotten wood, but we only argys a little on thet. Every feller to the bait he likes, we figger. I figgered Seth ud head fer where thet big trout hangs out, so I goes on up inter the gap. We fishes some different, ez he likely tole you. Mebbe in a whole mornin' he'll only cover a quarter mile o' the run. As fer me, I figger the more water fished the better. Jest don't git the idear thet I mean a feller should go keerless-like. Ef ye know the holes ye kin still work along at a smart clip without the trout seein' ye.

Well, I works in keerful like ter a old stump thet had been washed out underneath where I knowed some fair trout ter hang out. I let the line out an' the sawyer no sooner then hits the swirl at the upper end when bang a trout hits it. I played him an' got him, one o' the purtiest speckled trout I ever ketched. About 10 inches long and heavy, with a crimson belly. Them there sawyers sure done the trick an' I hed six mountain trout from 9 ter 10 inches by 8 in the mornin'. Then I quit. Thet's all we kin eat at home an' I like my fishin' too much ter act the hog about it.

Some fellers when they fish mountain runs gives trout too long with the bait. Mebbe a feller will lose some fish by it, but I strikes purty quick when one takes ahold. Mountain cricks often hes a lot o' little trout in 'em, an' ef there's one thing upsets me it's ter hurt a fish under legal size bad. Us fellers jest don't fish the feeder runs ter our big crick enny more, an' them young trout we stocked back two years hes done great.

Well, I'll be a signin' off now. Be lettin' ye know if Seth gits that big speckled trout.

"NORTH TIER FISHERMAN" TELLS OF "TROUT PACK"

From our "North Tier Fisherman", reliable ANGLER correspondent in the heart of some of Pennsylvania's finest trout country comes word of an interesting phenomena concerning the brown trout of Pine Creek. For those who are contemplating fishing the fast water of big Pine this season, his communication should be of particular interest. The letter follows:

"In view of the fact that trout fishing time is just around the corner, it might be of interest to some of the readers of the

ANGLER to know of a rather unusual thing that takes place in Pine Creek every year.

"It is a known fact that the brown trout finds a home and usually stays there, except at spawning time when he moves out for from a few feet to quite a distance but always returns to his former home. Now, in Pine Creek, there are several large schools of brownies, all sizes from five inches long to as large as brown trout grow, that during June, July, August, September, and October, "gang up" at different places along the stream, but stay but one season in a place. I have tried to follow the travels of these schools of trout and in some way to figure them out, but have succeeded only in making a record of their different stopping places and here it is. In 1930 from Ansonia upstream about one mile; in 1931, from Trout Run at Blackwells down stream one mile; in 1932, Pine Island downstream. In 1933, I did not find them personally but was told that they were in Potter County, 30 miles above their previous haunts, in 1934, at the mouth of Four Mile Run and upstream about one-half mile, and last year I did not find them until September, when I discovered them at the mouth of Falling Spring Run in a small stream of water back of an island. There were scores of them and, I could see a number around 10 inches long which may have been stocked trout that had joined the pack. A good many fishermen have noticed this phenomena and none are able to explain it. The fish in the picture you published last year, one of which was 28 inches long, was taken from this group, and in 1928, William Smith caught 19 out of the same school that weighed 25 pounds dressed. I have some photos of others that were caught by myself at different times when I discovered the location of these fish. It would be of much interest to Pine Creek fishermen if Mr. Ross Buller would give his opinion about them.

"Pine Creek is about 70 miles long and somewhere along it will be some real trout fishing if these traveling brownies can be located this spring. There will also be the usual good late May and June fishing in upper Pine this year. We are getting bigger trout each year as we are able to hook an occasional survivor of fish stocked several years ago.

"Legal rainbows were stocked in Pine Creek for the first time last year and it is interesting to know of their travels. Some were caught by sucker fishermen at the mouth of Little Pine Creek, 50 miles from where they were stocked and I caught two and saw several others that were taken in Babbs Creek headwaters. They had gone down stream about 30 miles and then through 11 miles of polluted water, (mine drainage which was probably much diluted by floods) up to the head of the creek. Of course, they could not be positively identified, but from their appearance, and from the fact that no one had ever known of rainbows having been stocked there, I inferred that they must be stocked fish from Pine Creek.

"Many of the fingerlings planted in the North Tier have survived and grown and will add something to the year's fishing. Last fall the beaver dams had a lot of nice trout in them and early fly fishing will be good in these dams."

WEIGHT OF LEGAL TROUT

Fishermen frequently inquire concerning the weight of brook, brown and rainbow trout when they achieve a legal length of 6 inches. Recently at our Bellefonte hatchery, Superintendent Dewey Sorenson weighed groups of 100 each of the brook, brown and rainbow species. All of the trout were 6-inch fish.

The rainbows topped the other species by a considerable margin, having a total weight of 11 pounds 5 ounces. Second in weight were the brown trout, 100 weighing 9 pounds 4 ounces. Our native brookies at this stage of growth were at the bottom of the list, weighing 8 pounds 8 ounces.

ERIE TROUT STREAMS

Every once in a while we receive letters from readers in northwestern Pennsylvania asking concerning the location of trout streams in Erie county and how to reach

them. Special Warden W. E. Briggs of Erie furnished the following information.

Beaver Dam Run, located between Union City and Corry, on highway Route 6.

Little Conneautee Creek, located between Mill Village and Edinboro on Route 79.

Boyds Run, flowing into Lake LeBoeuf, located about one mile north of Waterford, on Route 19.

Trout Run, located about 12 miles west of Erie, on Route 99.

The accompanying illustration is a winter scene taken on Beaver Dam Run.

JUST USE WORMS—SUCKERS LIKE 'EM

We recently received a letter from one of our Philadelphia subscribers, inquiring as to the best bait to use for suckers. When it comes to taking these bottom-feeders, just plain garden worms, sometimes referred to politely as garden hackles are about the universal bait. In some streams, the red worm is a favorite, while on the Conodoguinet in Cumberland County, those black headed worms found along the stream banks rank high. Not too big a worm, on a small hook and you're set for still-fishin' for suckers.

Of course, suckers are sometimes taken on other baits, doughballs occasionally, and we have heard at least one fisherman remark that he caught one on a shrimp while fishing for catfish. Hook the worm on lightly, taking the barb of the hook lightly through the skin at two or three places, so that it wriggles plenty. Then set the rod or pole and have patience.

A fairly heavy sinker at the end of the line, with say two hooks spaced fifteen inches apart above it, is a good idea. And we'll add that winter or spring caught suckers are fit meat for a king.

PREDICTS GOOD YEAR FOR FISHING CREEK

D. E. Hartman, postmaster at Benton, in Columbia County, recently sent us the accompanying photo of two big brown trout taken on Fishing Creek and Coles Run, a

tributary to that stream, last season. The largest brownie weighed 4 pounds. Both fish were taken on grasshoppers. When it comes to knowing his trout fishing, Mr. Hartman ranks with the best. He uses flies exclusively, save during that particular period when the big browns are hitting those yellow bodied grasshoppers like nobody's business.

"Both these fish were caught on grasshoppers," he writes, "at about 11 o'clock one evening last July. They were taken on a 4½ ounce rod and I sure had a battle with the biggest one. Got them on our old stamping grounds, the largest one below Edson Dam and the other at Coles Creek Dam. Had a wonderful season last year, the best in several years. Except for grasshoppers, I fished fly all year and will never go back to bait. Spent a week with the family at Hommets Ferry for bass and had a fine trip and vacation. We caught quite a few bass but they were not biting so well at that time. I caught 31 bass in one day on fly, returning all but three to the water to grow larger. It sure is sport when they hit a fly. The outlook for trout fishing is very good in Fishing Creek this spring. The creek is now (March 5th) clear of ice, and not very high, but there is still about 5 feet of snow on the mountains so no doubt there will be high water for some time."

The better grades of bait casting reels are made with the precision of a fine watch. No better action can be expected from the dollar reel than from the dollar watch.

SMOKE WHILE FISHING—HERE'S A TIMELY HINT

With the trout season now under way, and thousands of anglers fishing waters in forested sections of Pennsylvania, it should be every fisherman's eoncern to be careful with fire. This applies not only to campfires—anglers generally know that to leave a smouldering blaze is to endanger the future of their sport—but to pipe, cigar and eigarette smoking. One spark from a match, pipe or cigarette, falling in dry leaves, is suffieient to cause a blaze that may ruin the entire watershed of a fine trout stream.

In line with this thought, the following advice given by Warden Frank Sanda of Steelton, is not only timely but should be adopted as a method of fire-prevention by every fisherman. The Department of Forests and Waters has a splendid slogan summing up the story in a few words—"Prevent Forest Fires—It Pays." It is essential that every sportsman realize the interdependence of fish, game and forests and in all possible ways do his part in conservation. The inexpensive device illustrated in this article and originated by Sanda is well worth consideration by every outdoorsman. He writes:

As spring is nearing and you will soon start out to enjoy your out-of-doors sports, when getting into our beautiful forests, you will see those old familiar posters *"PREVENT FOREST FIRES—IT PAYS."* These signs are bing put up by the Pennsylvania Department of Forests and Waters as a reminder to us, and for our own benefit. It is a campaign that is extensively carried on by that Department all over the state and all through the year, at great expense, but how many of us ever stop to read them, or realize and appreciate the real value of their meaning?

You no doubt have noticed that whenever authorities on forests write or talk to us on any subject on forests, they will always beg and plead with us to *prevent forest fires.* Now why are they doing this? Are they doing it for their own personal interest? Of course not. They are doing it for your interest and mine and every citizen of our great Commonwealth. These men have spent the best part of their lives studying the forests; they know the real value of them. and what destruction and devastation forest fires eause, but you and I do not fully realize this.

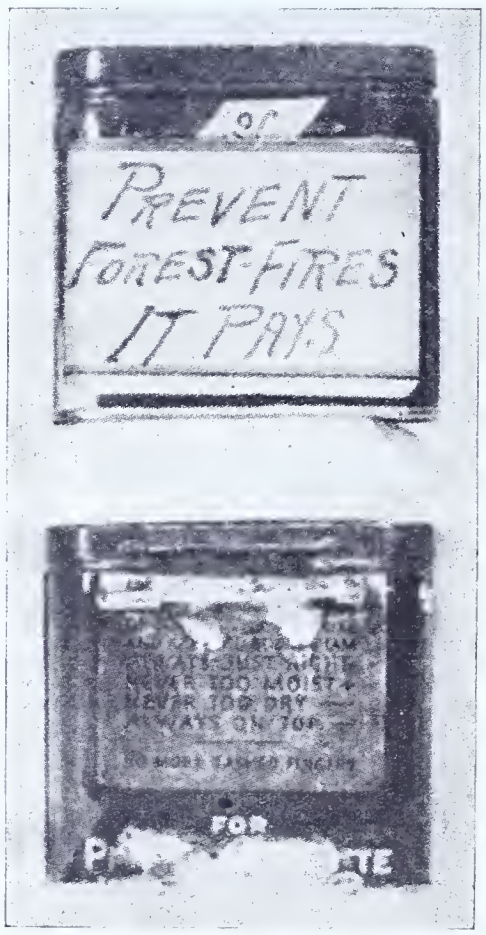
Mr. Karl E. Pfeifer of the Maryland Forestry Department and an authority on forests, in an article asks this question, "Do our sportsmen and lovers of out-of-doors realize the perils that are threatening the forests, and through them our streams and wild life?" Forests are the backbone of our nation, for all occupations are closely allied to the forest or its products. The forest is the home of our birds and animals and they depend on trees and bushes for food and shelter. Denuded hillsides and burned over forests offer no protection, and so the wild life moves on or dies. It is a true saying that "where fire runs game will not." Consider these things and practice forest fire prevention at all times.

We all know that the greatest percentage of forest fires are attributed to people smoking in the woods. The year of 1930 was an exceptionally bad one for *forest fires.* During the summer of that year in one week we had one hundred forty forest fires

Warden Sanda Wearing the "Kit"

in the state, according to press reports. So, my friends, don't you think it is high time for all of us to give our best efforts to try to put a stop to this tremendous waste and destruetion of our forests? If we are going to let our forests go to destruction at this rate, what will the future generations of this great state do for their lumber, their wild life, fishing, eamping and recreation centers, which eannot be measured in terms of money? They may even be compelled to go to other sources for their kindling wood.

Now to try to assist in solving this problem, or at least try to reduee the number of forest fires. I have devised what is



called a *"FIRE PREVENTION KIT,"* which if eonscientiously used by every person smoking in or near the forests would prevent a great number of forest fires. This "kit" is merely a small tin box with lid, to which are attached two safety-pins so that the box can be attached to the outer garment. The idea is to deposit all eigaret stubs, pipe ashes, cigar stubs, burnt matches, etc., in this box, instead of throwing them on the ground where they often ignite dry leaves, moss etc., unknown to the smoker. These "kits" can be made very easily by any person at little or no expense and trouble as the above sketches show how simple and easy they are to make.

There will probably be a number of people who will think it is unneeessary for them to wear this kit, as they will elaim that "they are always careful to blow out matches, tramp eigaret or eigar stubs out, etc." But, dear friends, the sparks are not always extinguished or there would not be so many forest fires eaused by this kind of earelessness, and we cannot be too careful when fire is concerned, as it is always the little spark that we overlook that eauses the big fires.

The idea of this little device was conceived while observing people lighting a cigaret or pipe, throwing away the half-burnt mateh, or dropping the stubs of cigaret or cigar on the ground and tramping on it very earefully, supposing the sparks are out. But what results in so many cases of this kind is that by tramping on the stub it is covered by leaves and you are unable to see the remaining sparks as you walk away.

No doubt you will admit that while sitting in your home reading and smoking, you would squeeze the stub of your cigaret on an ash tray until you thought it was out, but in a few moments you were almost choking from the smoke from the stub you believed was "out."

I hope that you will see the advantage and the possibilities of this little "fire prevention kit" and that every person will wear one while in or near the woods when smoking. I believe that every good sportsman will not only wear it but use it, and thus prevent a great number of fires.

I am not advoeating the use of this deviee for any personal gain. My sole interest is in the preservation of our forests, and I feel assured, as well as a great number of sportsmen who are familiar with this deviee, that if every person will take the proper interest and use this little "kit," that by the end of 1931 the reduction in the number of forest fires will well repay them for the little trouble, if any, that they were put to by using it. Would it not be worth while if only *one* devastating forest fire was prevented? I feel sure that you all will fully eooperate in this effort to conserve our forests.

GOOD WORK, NELSON

Nelson Ryder, 18 years old, who lives near Mercersburg in Franklin County, waged an effective watersnake killing campaign last year. He writes that he shot last year on streams near his home 46 watersnakes. Needless to say, he is intensely interested in the future of fishing in that territory.

IN ANTICIPATION

The following lines written by Ray L. Eicher, secretary of the Monongahela Sportsmen's Assoeiation in anticipation of the 1936 trout season just about hits the spot relative to pre-season angling fever.

Trout, the gamest of all finny battlers which inhabit inland waters, are in for their annual tug of war with erafty anglers, come April 15.

For beginning at dawn on that Wednesday a month and half from now will find local and district anglers weighed down with all kinds of tackle imaginable for taking trout. And we venture to say that half of the equipment will be of no earthly good

to them. But, nevertheless, an angler must look the part—therefore, loaded down with basket, lines, rods and the like, not to forget several dozen flies sticking in his hat—he will go forward to the wars.

And from what we've heard from veteran trout fishermen, when we say WAR we mean a terrific battle of brawn—plus strength of the pole and line—and a pound or so of nitro flashing in the stream. Leaping, twisting, tugging, tearing. Trout are like that. So is it any wonder the boys with trout blood in their veins get the fever the first day the sun shines after several months of cloudiness and wintry weather. And is it any wonder the togs are brought out of closets and attics and inspected? Lines stretched the full length of back yards, and given severe tests to see if they can stand the strain after being on the shelf for so many months.

It seems so unnatural that the line must be that strong to land a measly 1, 2 or 3 pound trout. Well, tie a handful of nitro on the end of the line, ignite it and you'll get an idea what we mean when we term trout with nitro.

Among our most ardent trout fishermen locally we have written many tales. Some have had fair catches, others none. But we hope they can cope with the nitro members of the scaly family more successfully this year, and not take from today until April 15 to get ready and then go out and cast flies on the waters, getting nothing but exercise for a strong right arm.

Fish can be bought in the market place
So it isn't the fish I'm after;
I want to get free from the care-drawn face
And back to an honest laughter.
I want to get out where the skies are clean,
And rest on a mossy brink.
I want to get out where the woods are green
And I want a few hours to think.

Oh, it isn't the fish I am greedy for,
It's the chatter and song of birds,
And the talk of trees that I've known before
I am weary of selfish words.
I want to stretch out, just my soul and I
In a place from the strife afar,
And let a few care-filled hours pass by
As I think of the things that are.

Oh, it isn't the fish that I go to get,
Though there's joy in a swishing line
And a splendid thrill when my grip I set
And a speckled brook trout is mine.
But my soul seems cramped in the stifling air
That is heavy with talk of gain,
And I want to get out where the world is fair
And there isn't so much of pain.

Fish can be bought in the market place,
But I long for the running streams
And I want to be free from the care-drawn face
And the city of dreadful dreams.
I want to stretch out, just my soul and I
On a sun-kissed river shore,
And be, as a few mad hours rush by,
The man that I am, once more.

—*Anonymous*

PRESQUE ISLE SPORTSMEN'S NOTES

The Presque Isle Sportsmen's League is on the air.

For the past two months the Erie County sportsmen's organization has been conducting a series of 15-minute radio broadcasts, three times a week, over Station WLEU.

Lee Omelian, owner and operator of the radio station, is an ardent sportsman and has provided the use of his station for the broadcasts. The programs are conducted as interviews, with Ray Peebles, sports editor of the *Erie Dispatch-Herald*, interviewing prominent sportsmen. Among the fishermen who have been heard on the program are Fish Warden William Briggs, District Attorney Mortimer Graham, and Grant Lynch, one of the most prominent bass fishermen in this part of the country.

Pennsylvania's flood waters prevented O. M. Deibler, Commissioner of Fisheries, from addressing the largest sportsmen's gathering ever held in Erie County. Deibler, along with Seth Gordon, Executive Secretary of the Game Commission, and Dr. J. F. Bogardus, Secretary of Forests and Waters, was scheduled to speak in Erie on March 19, but the meeting was cancelled when all three speakers were marooned in the flood. Bogardus reached Erie, but was immediately summoned to Pittsburgh by Governor Earle. Commissioner Deibler also was assigned to the Pittsburgh district. Gordon was marooned in Clearfield.

A new date is being arranged for the meeting, and it is expected that the three state speakers will be on hand.

The Presque Isle Sportsmen's League, an organization boasting over 1,500 members among Erie County sportsmen, has selected the PENNSYLVANIA ANGLER and the *Game News* as its official publications.

A subscription to one of the publications is given each member upon payment of his annual membership fee, which is one dollar.

The growth of the organization since the first of the year, from less than 100 members to the present total of 1,500 is evidence of the interest that has been aroused by the new administration headed by Dr. John J. Koehler, president.

OLD TOWN SPORTSMEN HOLD MARCH RALLY

The following report of an exceptionally well attended meeting of the Old Town Sportsmen in Clearfield County was received recently from J. F. Livingston, president. The interest being taken in conservation by its members was very much in evidence at the March get-together.

B. A. Ashcraft of Clearfield was the principal speaker of the evening, talking on "Wild Life Photography." Game protectors Jack Brion and Winfield McClure made reports on winter game feeding. These talks were very interesting and thoroughly enjoyed by the members.

The chairmen of the Hunting, Membership, Dog and Firearm committees made reports of the work carried on by these committees. The following business was transacted.

O. S. Barrett, delegate to the meeting of the Pennsylvania Federation of Sportsmens Clubs, reported on the business transacted at the recent meeting of the Federation.

Certificates for meritorious work in Conservation were awarded to Ed Miller, Clifford Connors and Ed Cowdrick for their work in feeding game during the severe winter.

Acting upon the request of the Clearfield County Fair Association voted to stage a Dog Show during the 1936 County Fair.

The question of approving an increase of 50c on hunting licenses was tabled until a more detailed study of the question could be made.

The association, acting on a letter received from the Fish Commission relative to changing the classification of Trout Run, voted to keep Trout Run classified as a brook trout stream.

The association voted to contact both the Pennsylvania Game Commission and the Fish Commission in an endeavor to have several of its members serve as deputy game and fish wardens in this vicinity. This action was taken so that the association will be able to help to some extent in curbing illegal hunting and fishing.

DANDY PIKE CATCH

You can't blame the two lucky fishermen in the accompanying photo for displaying, with considerable pride, two fine wall-eyed pike from the Susquehanna river at Columbia. George Weigel at the left is holding a fish that weighed 5 pounds 6 ounces, while the fish held by Roye Rode, right, tipped the scales at 5 pounds 4 ounces. Pretty nearly twin pike, we'd say.

Anglers Weigel and Rode both live at Columbia and are members of the Columbia Fish and Game Association. They were trolling with Susquehanna spinners when the catch was made one day last summer.

A sportsman kills his fish as soon as caught as it is unmerciful to let a fish die slowly from suffocation in a creel.

It Is Not All Of Fishing To Take Fish

Fresh water angling for game fish, writes Rev. James H. Goss of Lewistown, is one of the cleanest recreations available in this world. The increase of our fishing population has made it necessary to place restrictions on, or season limits when fish may be taken from our fresh water streams. This restriction necessarily leaves about four and a half months during the year when the game fish angler can not actively engage in placing fish in his creel.

But fishing is not all in having twelve inches of real live trout on the end of that rod which you think is the best in the world. Fishing is not all in carrying home a basket filled with more trout or bass than you and your family can eat; neither is it only recreation when one stands in the brook in a pair of waders when the sun begins to peep through the trees, here and there a fly begins to dance over the pools, and you begin to place your artificial on the pool where you just saw the flash of your wary game. The hours of contemplation with the fond anticipation of April 15th, or July 1st, these are also happy hours that afford real sport and recreation. This is the time when anything that will divert the anglers attention into novel paths is balm for the worried and anxious fishing mind.

The novelties of getting the fishing tackle ready for the opening day have been to the writer a source of real joy, entertainment, and recreation. There are so many things to be done with your equipment, if you are going to enjoy the open season, that it will take the average working man all winter to get everything in shape, from his rod grip to his suspender buttons. And what is more disappointing than to plan a fishing trip and the night before have to hunt for all your equipment and then find that your old boots were not patched since you snagged them, your fishing coat was ripped in the brush, your creel strap almost worn through at the edge of the basket, you forgot to buy some leaders before the sporting goods stores closed that evening. But you finally do get out where God still does the decorating with all of nature's beauty, and where there is no static in the song of the bird, and where civilization has not polluted the crystal stream. At last you have reached the end of the rainbow. Now take your rod from the case and joint it together to see if it still feels the same as last year. To your astonishment you find a loose ferrule, or perhaps the top has come loose, a little warp has thrown the old reliable out of balance. What a disappointment! Again anticipation may have been more that realization. You say to yourself: "The next time I go fishing I will get my tackle ready in time." Get your rod ready before the season opens.

The condition of your rod in the spring will depend largely on where you keep it during the time when there "ain't no fishing." In the first place, HANG IT UP. If you do not have a place to hang the rod full length, then hang each joint by the end. A spring clothes pin with a little wire hook attached to one of the upper ends makes a splendid attachment to hang up your rod joints. Just snap the wooden pin over the joint and the wire hook can be hung over a nail or other object. Be sure that you do not hang your rod where the temperature is too high, or it will dry out excessively and always loosen your ferrules. If you have a warm dry cellar you will be perfectly safe in hanging your rod there. The writer has his fishing rod shop in the cellar and keeps all rods there during the winter with entire satisfaction.

If you are going to take off the varnish on that old rod which has become cracked by too many coats of varnish do it during the winter, don't wait until the week before the season opens. Rev. Goss has had fishermen bring their rods to have them completely remodeled just a week before the trout season. This cannot be done, because a good rod varnish dries very slowly, and to put a substantial, beautiful, serviceable finish on a good fishing rod requires no less than two weeks of time. Again, he observes, anglers sometimes repair their rods hurriedly, by applying a coat of quick drying varnish, or shellac. This is absolutely detrimental to the action of the rod and will soon crack off and admit moisture to the bare sticks. Remember moisture is the enemy of your split bamboo. Keep this in mind and after each fishing day apply some good oil and rub it in well. This will water proof any varnish cracks and protect your rod.

One of the mistakes too frequently made by men who have only a day or two to fish each season is that they do not feel they need to have their tackle in very good condition for such a short period of angling. This is all the more reason why they should have everything in the finest condition. If you have only one day to fish you do not want that day spoiled because you have a bad line, a loose ferrule, or a broken rod tip. Always keep your fishing equipment in first class condition if you want to enjoy the one day you may have, and always keep the entire outfit where you can find it without asking your wife too many questions the night before the trip. And never ask a rod maker to work miracles on your old rod in a week of time. It can't be done.

If you do all the things that need to be done so you will have everything in readiness for the opening of the season you will spend many hours in novel work which will be fine recreation and a balm for your worried mind. When there ain't no fishin' just think of April 15th, and July 1st, and spend all your leisure hours looking over everything you expect to have with you the next time you fall into the creek.

Johnson Creek, Wayne County. A Fine Brook Trout Stream

"Here's to the swish of the Split-Bamboo!
Flitting my flies o'er riffle and pool,
Bidding all grown-up cares adieu,
Back again coming to nature's school,
May the wind blow soft, my cast light true,
As Fontinalis I try to fool,
And my creel has received its due
When come the shades of evening cool.
Here's to the swish of the Split-Bamboo!
Musical swish of my own bamboo."

SPORTSMEN BANQUET IN PHILADELPHIA

The annual banquet of the Pennsylvania Fish and Game Protective Association, oldest sportsmen's organization in the state, was held at the Penn Athletic Club in Philadelphia on the evening of February 5. Over 700 sportsmen gathered at the gala event, and heard inspiring addresses by Seth Gordon, executive secretary of the Game Commission, Hon. Nicholas Biddle, president of the Board of Game Commissioners, O. M. Deibler, Commissioner of Fisheries, and Bill Duncan, popular Philadelphia newspaper columnist.

A varied program featured the dinner. Fishing and hunting yarns, cleverly planned stage scenes relative to the out doors, and

Slate Run, Lycoming County. A Great Brown Trout Stream

award of fish prizes to members of the Association were keenly enjoyed.

This live-wire sportsmen's group in Southeastern Pennsylvania is headed by Edgar W. Nicholson, Fish Commission member, of Philadelphia.

FINDS NEW USE FOR CAT'S WHISKERS

A mystery which promised to stump even the famous detectives of Scotland Yard was solved yesterday by local sleuths. On Tuesday morning "Jojo" the white and yellow tomcat which "Senator Fred" Thompson captured in the wilds of the Alleghenies and which has served as night watchman at both the Shaffer Store and the Keystone Gazette office on Allegheny Street, made his usual appearance but in an unusual manner. "Jojo" was minus his whiskers!

Immediately the machinery of justice was set in operation and the neighborhood was combed thoroughly for clues. After all evidence had been collected it was determined that "Jojo" was still in possession of his whiskers when he entered J. O. Heverly's sporting goods store on that fateful night of Monday, January 20. Since that store was the last place in which the husky tomcat was seen that night, the natural deduction was that the bewhiskering act occurred in that store.

Unfortunately for "J o j o" he either marched or was dragged forcibly into the store just at the moment when the proprietor, in the midst of tying up a dry fly, was searching relentlessly for a tail for the fly. Now it so happened that his eyes lit upon "Jojo's" white whiskers and right there the search ended.

And now poor "Jojo", who until Monday night was the "head man" among the neighborhood felines, finds that his standing in society has dropped several degrees through the loss of those attractive bristles.

Keystone Gazette, Bellefonte

Note: Dr. Dick Hoffman of Bellefonte, a persistent fly-tyer if ever there was one, is rumored to have evolved this latest fad—"Cat's Whiskers Dry Flies."

ROXBURY SPORTSMEN FORM ASSOCIATION

Meeting on the evening of March 12 at the Roxbury Reformed Church, Roxbury, Somerset county, forty sportsmen organized an Association and interest is running high, according to word received by the ANGLER.

The following officers were elected: president, Rev. H. A. Ash; first vice-president, L. H. Kimmel; second vice-president, Ed. Stutzman; recording secretary, C. G. Carver, and secretary-treasurer, G. L. Engle.

After the election of officers, the members were confronted with the task of naming the organization: Mountain, Field and Stream Club was the name finally agreed upon. Other matters discussed were dues and plans for a banquet. The following committees were appointed: a By-Laws Committee consisting of Lee M. Musser, chairman, L. H. Kimmel, William Landis; a committee to arrange for the banquet and secure members with G. L. Engle as chairman, H. A. Gindlesperger, E. L. Stull, John Grenke, Merle Hillegass, Ed. Stutzman, Alvin Carver, Roy Yutzey, Dewey Boyer, and Nevin Crober; and a publicity committee consisting of Don Kimmel, chairman, and Lee Musser.

It is the ambition of this organization to become one of the leading organizations of its kind in Somerset County.

STREAM IMPROVEMENT

(Continued from page 1)

sportsmen, whose job we thought it was to carry on this work, become interested, would be to establish a model project that would be centrally located in the State. We were, indeed, most fortunate that we were able to purchase some mileage on Spring Creek, near Bellefonte, the exact geographic center of the State. This is one of the most widely known trout streams in the East, and possibly the most popular in our State. The nature of the stream also offered all the possibilities one could hope for.

After the property was secured we started to work with the knowledge and information we had been able to gather and with what little stream sense we possessed ourselves. We began improving this stretch of water with every device we knew, until we felt we had a fairly concrete example of what could be done. This particular stretch of water, before improvement work was started had approximately three pools on a stretch of one and one-quarter miles, that afforded habitat and protection for fish. The greater part of the remaining mileage comprised a rather long sluggish section with little visible current apparent, while other sections were wide with extremely shallow riffles. After the project reached completion, the thought occurred as to whether the sportsmen, in whose interests this work was accomplished, would be sufficiently interested to come and study the project with a viewpoint of taking this knowledge back to their respective clubs and districts. Grave doubts arose in our minds as to whether sufficient sportsmen could be induced to come and study something that would not offer anything more than cold facts.

Realizing that fishermen, perhaps, were no different from men in other walks of life who usually need some additional inducement, trivial though sometimes it may be, to come out for the more important things. We thought perhaps our sportsmen might feel the same way about it. In order to offer an added appeal, it was decided to give our fishermen some trout fishing de luxe, which would bring them if anything would. In this we were not mistaken, as on the opening day at the project, despite inclement weather there were approximately 3,000 visitors present, with 472 of them registering and actually enjoying the sport provided. This phase of the project, while not considered with the stream improvement work at the beginning, has been demonstrated to be quite as worthwhile from a conservation point of view as the stream farming itself. This factor enables us to demonstrate, in a practical manner, that the carrying capacity of any stream, well improved, will have been increased many fold. This we proved by stocking 9,000 trout ranging in length from 10 to 17 inches in this mile and a quarter of improved stream, and to find that they stayed put in their new environment.

We were also able to demonstrate true sportsmanship to that class of fishermen, of whom every State has too many, and whom we term "killers" rather than sportsmen. This type of angler can only measure the success of his fishing trip or sport by the number of dead fish he takes home to exhibit to friends. By placing restrictions on the fishing and limiting the daily kill to two trout, ten inches or over in length, for each fisherman, we at the same time permitted him to catch and release fifteen trout, the legal creel limit in our State. All fishing was limited to artificial lures with barbs on the hooks pressed down. This feature of the experimental project has been most popular, as a very small percentage of the thousands who have visited Spring Creek and enjoyed the sport during the past two years have complained about the number of fish they were permitted to kill. Many expert anglers refused to kill any. One particular chap told me on the closing day of the season last year that he had 57 large trout but had not killed any, as he felt that he could not afford to kill fish so valuable to the sportsmen. He felt the same was true of other sportsmen—that they were worth many times more alive in the stream where they could furnish sport—than they were, dead in his creel. With the hearty support the sportsmen have given this project, we felt it advisable to adopt a new slogan last year for the Board which seemed quite appropriate where fishing conditions exist as they do in Pennsylvania. This slogan is "If you Would Catch More Fish—Kill Less!"

Another angle presented itself on this subject. Previously we had not catered to another class of the fishing public, who without doubt will play a very important part in our future conservation work. I refer to milady, the would-be angler. We had an excellent opportunity to set aside a quarter-mile of a beautiful smaller trout stream on the property, exclusively for lady anglers. Here they could fish and swish to their heart's content, without being annoyed by critical hubby. This has proved quite as popular as the main project for the men. During the first year we had 266 lady anglers, many of whom had never fished before and for the first time purchased a license right on the property. This number was increased in 1935 to 647 ladies, while the registered men fishermen in 1934 numbered 4,808 and in 1935 increased to 6,163. It is to be observed that the lady anglers increased approximately 300%, while the men increased a mere 50%. A competent instructor and fly caster was available for the ladies who were taking up the art for the first time. When we succeed in selling fishing to our wives and sweethearts in a thorough manner, it will not be necessary in the future for us men folks to manufacture so many excuses and unbelievable stories, as has been the rule in the past when we were contemplating a fishing trip.

The results of the establishment of this outdoor laboratory, which I have tried to describe, is self-evident from the fact that during the first year, stream improvement work was carried on in approximately seventeen counties by various sportsmen's organizations, who furnished the labor, financed the purchase of what materials were needed, and did some worthwhile work.

The stream improvement idea was so thoroughly sold by last spring that in almost every county of the State the sportsmen themselves were carrying on the work, or were successful in setting up Federal Aid projects. During 1935 over one-half million dollars of WPA funds were allocated for projects in fifty counties, which should add a total stream mileage of almost a thousand miles of improved streams to those already improved. A number of large worthwhile dams and lakes have also been built, others being constructed at the present time. Stream improvement projects now in progress and others that have been approved, will, I feel confident, more than double the carrying capacity of our streams. With normal rainfall, I feel the outlook for our fishermen is much more promising than it has been at any time for the past five years. This has been brought about largely through the practical demonstration of the value of intensive stream farming at our Bellefonte Outdoor Fishermen's Laboratory.

SUCKER FISHING GOOD IN SWEET ARROW LAKE

Word has been received from Warden Anthony Lech of Shenandoah that heavy catches of suckers, ranging in length from 8 to 18 inches are being made this spring in Sweet Arrow Lake, Deer Lake and Lakewood Pond, Schuylkill county. Among those anglers enjoying this fine fishing is veteran Hall Rupp, 70 years old.

Catches reported on three successive days numbered 157,192 and 143 suckers, Lech reports.

GOOD NEWS, ANGLERS— A BOOK BY WETZEL

For many ANGLER readers who have been enjoying the fine articles written by Chas. M. Wetzel concerning aquatic insects, fly tying and the art of fishing a fly, there's great news in the announcement that a book by Charley, *The Art of Fly Tying* has been published. It comprises ten chapters, with twelve full pages of illustrations.

Here are the chapter titles: (1) On Insects, (2) On Tools and Materials, (3) On Knots, (4) On Bi-Visibles and Nymphs, (5) On Winging Flies, (6) On Wet Flies, (7) On Dry Flies, (8) On Mayflies, (9) On Miscellaneous Flies, and (10) On Trout Fly Dressings.

H. J. Noll of 536 W. Clapier St., Philadelphia, Pa., is distributing the book and it will only be procurable through him at a nominal fee, writes Charley.

PIONEER MEMBERS RAISE FLOOD RELIEF FUND

Following the flood disaster of March, the Pioneer Fish and Game Protective Association of Allentown at its meeting on the evening of March 19 voted to do its part in relief to flood sufferers. Writes Harvey D. Neff, secretary of the Association:

"At the regular meeting of the Pioneer Fish and Game Protective Association held Thursday night March 19th, the members unanimously voted a contribution of $10.00 to the American Red Cross for the purpose of aiding the stricken flood sufferers. Has another Sportsmen's Organization contributed to this worthy cause? If not, why not? They say red blood runs through the veins of every true sportsman."

BOOSTS FLY FISHING

C. A. Kniss, writing under the pen name of "Cee Asher" in an outdoor column of the *Mifflinburg Telegraph*, gives fly fishing a real boost. Here's what he has to say. Incidentally, he handles a fly mighty effectively.

Each year more and more fishermen are turning to fly fishing and are discovering that they get a greater thrill and for more enjoyment by this method of catching fish than from any other. If you go fishing for the sport of fishing you will be delighted by the fuller measure of satisfaction derived by the use of artificial fly.

The art of casting a fly is not difficult to master. If you use a little care in selecting an outfit and do a little practicing on the lawn you will find that you are able to learn the fundamental overhead cast in a remarkably short time. And don't let any one kid you in thinking that an outfit to be good will cost a lot of money.

The essential points in selecting fly fishing equipment is to get an outfit that will balance, a line that will not crack and peel and a leader that has enough backbone to carry-out without tying itself in a knot, but light enough so it will not look like a rope when in the water.

Try fly casting and get a real thrill out of fishing.

FEDERATION OF WILDLIFE GROUPS IN FULL SWING

Federation of all wildlife interests into powerful county, state and national units, as provided for by action of the recent North American Wildlife Conference which met in Washington on the call of President Roosevelt, is now in full swing according to Jay N. Darling, who was elected temporary president of the newly formed General Wildlife Federation.

In a message just issued to members of the 48 state committees named at the Conference to set the federation wheels in motion, Mr. Darling, famous cartoonist conservationist and former Chief of the Bureau of Biological Survey, outlined in further detail the needs for the federation and the methods by which it will operate. He said:

"We who believe in more wildlife have been fighting each other too long, or not fighting at all. Certainly we have not been fighting the major agencies of exploitation which have destroyed the environment in which our wildlife species breed and live. The mechanism for unified action among conservationists has been lacking.

"Our own chaos seems to have been used by every agency of government as an excuse for withholding their support. What has been everybody's business has proved to be nobody's business. At best there have been only a few out of many supporters who have contacted our government officials in the interest of wildlife conservation.

"Our approach has failed to achieve results and the plain bare fact of the matter is that elected officials pay little attention to committee representations, petitions or resolutions. It takes direct word from their voting constituents to affect their action. Elected officials take their mandates from the opinions of their individual constituents whom they are elected to represent.

Last Year's Record Brown Trout

"After many years of experience, I know that one letter from a voter within an officeholder's precinct is more powerful than all the influence combined of paid secretaries or presidents of national organizations laboring with legislatures, Governors or governmental bureaus."

Mr. Darling then stated that it is possible to make the voting strength of wildlife conservationists effective without great difficulty, cost or interference with partisan politics.

"The object of this federation," he continued, "will be to keep the individuals informed of the needs, crises and information relative to governmental activities or lack of them in the field of conservation, and thereby enable the voter intelligently to register his opinion with the designated public official.

Mr. Darling then went on to explain that there are 36,000 clubs, societies leagues, chapters, and associations in the United States which specify wildlife restoration and conservation as one of their major objectives, that they include several million individuals in their membership, and that the simplest way to obtain a natural working federation is to coordinate these existing organizations.

"The problem," he said, "has been to find a mechanism which would carry the message to these people when needed, and have the voters respond directly to the government officials. A hundred emergencies have existed in the last year when both state and national projects might have been saved by an aroused and vocal expression by the voters interested in wildlife problems. Nothing was done because there was no connecting link between those in charge of the projects and the home folks who would have welcomed them. The Federation will serve as this connecting link.

"The whole idea of the Federation is to set up a mechanism whereby the individuals may be kept informed and do their own protesting and demanding in time to have a bearing on officials' activities. The Federation is to make it possible for the individual to know and act in the major emergencies affecting the entire wildlife restoration field. It is not to select someone to represent conservationists in the state or in Washington but to do just the opposite—bring the word to you and let you do the voicing of your own opinions.

"This is a reversal of the habitual conception of accomplishing objectives by the old process of delegating to committees and officers the job of voicing our protests through secretaries and resolutions. The success of the new Federation depends on the responsiveness of the individual."

HERE AND THERE IN ANGLERDOM

Chester Giesey of Harrisburg also made a good catch of suckers on the Conodoguinet at Good Hope Mills, reports Special Warden Chet Steigerwalt. Giesey's catch consisted of 12 suckers, from 10 to 17 inches in length.

Spring Creek and Bald Eagle Creek, Centre county, provided good sucker fishing during March, according to Warden Dave Dahlgren of Philipsburg. Four suckers, from 10 to 13 inches in length, were taken by H. M. Williams of Bellefonte. Mel Shay, Bellefonte, caught three on the same day, the largest measuring 17 inches. McCoy's dam on Spring Creek yielded a catch of five suckers to Joe Bonchack of Bellefonte. Alvin Fetters, Bellefonte, R. D., scored with 25 at the dam, ranging in length from 8 to 15 inches. Twelve suckers taken by W. J. Aikey of Bellefonte from Bald Eagle Creek, measured from 9 to 16 inches.

Mrs. Ida B. Haage, 63 years old, of Reading, writes that she goes fishing at least once a week. Recently, while fishing in the Monocacy Creek, near Birdsboro, she caught a 21-inch carp weighing four pounds and a large sucker on a single cast. While fishing for suckers last year, she writes, she caught a 42-inch watersnake which her husband killed. This strange catch was made in the Allegheny Creek above Gibraltar, Berks county.

Franklin county waters again this year have been furnishing good sucker fishing, according to Warden Charles Long of East Waterford. William Wise of Medal, Franklin county, recently made a one-day catch of 25 suckers, ranging in length from 12 to 18 inches.

The Upper Delaware River, in the vicinity of Milford, Pike county, is furnishing its usual fine sucker fishing again this year, writes Warden Frank Brink of Milford. Everett Leicht of Milford recently caught 14 whoppers at Ditch Lot above Milford. John Snyder, Milford, has also had good luck every time he fished in the river, with catches running from 10 to 14.

Wading upstream is advantageous as muddy water made in walking will not float through the pools ahead of you. Also by casting up stream a lure will seem more natural as it floats back down.

While fishing in Vanyscoyoc Run, Ira Cook of Tyrone, landed a brown trout measuring 17½ inches, and Clarence Bachelor of Tyrone, scored with a 19-inch brownie from Bald Eagle Creek last season, according to Warden Link Lender of Bellwood.

A Catch of Brown Trout, 15 to 20 inches, made by H. P. Custard, Standsburg, in Brookhead's Creek

From K. S. Bailey, special warden at Waymart, Wayne County, comes word of a nice brown trout taken last season in the West Branch of the Lackawaxen. J. H. Chyle, Aldenville merchant, landed the brownie, a fish measuring 19 inches in length and weighing 2½ pounds.

Will Rudy, outdoor writer for the *Lancaster New Era*, called attention to a brand new type of sport for fly fishermen on the Lower Susquehanna last year. He wrote, "Shad have appeared and are striking in the lower Susquehanna below Deer Creek and Rock Run. If you are a fly fisherman, why not try this sport? Use a 6½ ounce fly rod, trout line and a Water Fly. If you are fortunate enough to hook into a roe shad you will have one-half to three-quarters of an hour fight before you bring it to net.

"The best time is from 2 P.M. until dark; anchor your boat in swift water and fish about 40 feet of line. The fish will rise and strike with great force. During the morning hours white and yellow perch will give you plenty of action."

In three trips to Sweet Arrow Lake last season, Willard Nelms, of Minersville, caught 12 bass, ranging in length from 12 to 18 inches. His largest bass for the 1934 season was a 20-inch smallmouth weighing 4½ pounds.

A 19½-inch largemouth bass, weighing 4 pounds, 6 ounces, was caught in Sweet Arrow Lake by Ralph Ditzler, of Suedberg.

A fine catch of suckers was made in October in the Conodoguinet Creek by L. A. Blough of Harrisburg. Seven in number, the fish ranged in weight from 1½ to 3 pounds.

M. L. Davis of Harrisburg made a catch of 15 catfish, from 7 to 10 inches in length, in Silver Lake, near Newberry.

Fishing in the Big Conoquenessing on December 22, Ray Davis of Fombel landed three fine suckers, according to Warden J. H. Simmons of Rochester.

Warden George Cross of Renovo reports two nice catches from Bald Eagle Creek during September. Edgar Lauback of Mill Hall landed a wall-eyed pike measuring 22 inches and George Mays, Mill Hall, succeeded in taking a 16-inch smallmouth bass in the same pool. Both catches were made on nightcrawlers.

Two nice wall-eyed pike were taken from Harmony Reservoir by Walter Ettes of Harmony Junction on October 13. One of the fish measured 24½ inches in length and weighed 2½ pounds, the other, 22½ inches, weighed 2¼ pounds.

"TRUTH NOT IN HIM"

E. D. Ball, of Glen Olden, recently submitted a few lines concerning a fisherman, which, he says, were given him by a minister years ago. We quote:

"Behold the fisherman. He ariseth early and maketh great preparations and e'er the sun is fully risen he goeth forth full of hope and great expectations. And when the day is far spent he returneth smelling of strong drink and the truth is not in him."

BULLFROG EATS DUCKS

According to Bill Keebaugh of Fulton County, Hayes Richard and his son who live near Big Cove in Fulton County made a strange discovery one day last summer. Richard, Fulton County treasurer, has a large spring pond on his farm in which are a number of giant bullfrogs.

On this particular day, they were checking up on loss of very young ducks which frequented the pond. Suddenly they saw a duckling disappear and investigating, found it almost completely pulled beneath a board. Raising the board, which was beneath the surface of the water, Keebaugh said they saw a giant bullfrog calmly tearing pieces from its victim.

Just another proof of the belief that big frogs will gulp down anything alive and moving that they are capable of swallowing.

A Junior Sportsman Tries His Luck for Trout on Wayne County's Lackawaxen Creek

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Vol. 5 No. 5

PENNSYLVANIA ANGLER

MAY, 1936

EDITORIAL

FISH FOR SPORT—NOT FOR MEAT

It has been truthfully stated time and again by those men who have devoted a great deal of time to the study of conservation matters and sportsmanship, as it applies to our fishing and hunting today, that the whole proposition and responsibility for the kind of sport we have rests solely with the sportsmen themselves. Just as we have the type of government the majority of the citizens seem to be satisfied with, just so is our sport regulated by those who take out hunting and fishing licenses. Good government can be preached until doomsday, but unless those who are interested in good government bestir themselves and become actively interested in the changing of present conditions, just so long will there be no changes brought about.

It is likewise true concerning our conservation and hunting and fishing conditions in Pennsylvania, that until more sportsmen are actually willing to put into practice these higher ideals which tend to better hunting and fishing conditions, just so long will our hunting and fishing remain as they are, with the strong probability of their growing worse and worse each year. With the ever increasing number of fishermen, with more leisure and time to fish, with good roads parallelling every stream and lake in the Commonwealth, it is just physically impossible for our waters to support sufficient fish to afford good sport for even the many thousands of our anglers who do enjoy fishing as a sport, and not as a means simply of getting meat for their table.

There has only been one conservation measure passed affecting our fishing since the adoption of the present fish code, the one reducing the daily trout limit from 25 to 15. The length of the seasons and the size of the catch, with this one exception, remains the same as it was when our present code was put into effect, yet since that time the number of fishermen has more than doubled and the fishable waters of the State are only about half of what they were at that time.

This Sportsman Was Satisfied With Two Nice Trout on Opening Day.

There is, however, a definite solution to our fishing problem in Pennsylvania and this problem can only be solved by the fishermen themselves. If each and every one of our more than 900 sportsmen's organizations in our State would adopt measures similar to those adopted by the Western Reserve Fish and Game Protective Association of Sharon, comprising a group of almost 700 members, I am sure the problem would be solved within a year, and the rank and file fishermen would for the first time have an equal chance with the expert and with the fellow who is on the stream every day of the season. I am reproducing herewith letter received from Mr. R. W. Roberts, the President of this Association, which is self-explanatory.

"I am enclosing newspaper write-up of a recent meeting of our sportsmen's organization, the Western Reserve Fish and Game Protective Association. You will notice in this considerable stress was put on size and number of trout our members feel should be sufficient to satisfy a fisherman. At this meeting we had about 500 present, an honor pledge was taken not to keep more than five trout on any one trip and to be very careful in returning under size trout to the water.

"Like expressions were made as to the size and number of bass to be taken. The writer feels that with but very few exceptions our entire membership of about 700 members will be pledged to an 11 inch size and five a day. It is hoped this will help make fishing better for everybody and with trout at least they will not all be taken in the first day or two of fishing, and one may have some chance of an occasional trout throughout the season.

"We believe if this is brought to the attention of other clubs, like action will be taken in sufficient cases to justify a change in creel limit and size of both species of fish.

"A number of local fishermen for several past years have kept no bass under 12 inches and not more than five a day, and we find this sentiment growing quite rapidly. The writer has talked with a great many fishermen in different parts of the state, and I find hardly without exception an agreement along these lines.

"Trusting to find fishermen in great numbers pledge themselves to 12 inches and five a day, for bass and not kill more than five trout per day, nine inches and over."

The whole proposition is, therefore, staring us fishermen squarely in the face. Are we willing to take a similar pledge as these men from Sharon have voluntarily done, and not only take the pledge, but live up to it and spread the gospel of true conservation and sportsmanship among all those with whom we come in contact, remembering that the Fish Commission cannot furnish meat for the meat fishermen, but can furnish excellent sport for the men who fish for sport, rather than meat? The problem is up to the fishermen themselves!

O. M. Dribben

Commissioner of Fisheries

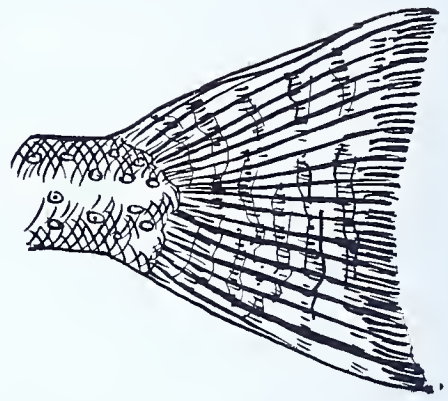
Fishes of Pennsylvania

By C. R. BULLER
Chief Fish Culturist, Board of Fish Commissioners

PART 1
General Characteristics

DR. JORDAN'S definition of a fish is: "A fish is a back-boned animal which lives in the water and cannot ever live very long anywhere else. Its ancestors have always dwelt in water, and most likely its descendants will forever follow their example. So, as the water is a region very different from the fields or the woods, a fish in form and structure must be quite unlike all the beasts and birds that walk or creep or fly above ground, breathing air and being fitted to live in it. There are a great many kinds of animals called fishes, but in this all of them agree: All have sort of a back-bone, all of them breathe their life long by means of gills, and none have fingers or toes with which to creep about on land."

TAIL OF THE STURGEON



TAIL OF THE TROUT

Fish are found living under all sorts of conditions; some are adapted for life in the frigid zone, where the weather is extremely cold; others in the temperate zone, where they must be capable of withstanding the cold water during the winter and warmer water during the summer. Others are of the torrid zone, or very warm climate. Without regard to climate, some fish are adapted for a life in the salt water of the ocean; others live in the fresh water of our streams, lakes, and rivers. Some live part of the time in salt water and part of the time in fresh water, usually migrating at the approach of spawning season from fresh to salt water, or vice versa; still others make their home in brackish waters; that is, where the salt water mingles with the fresh water at the mouths of the stream.

While this article deals only with Pennsylvania fishes, fortunately, we have two direct outlets for the fishes to salt water; the Susquehanna River and the Delaware River where the migration of several species takes place. Fish whose real home is in the ocean but enter fresh water to spawn or reproduce are called Anadromous fish. An example of one of the fishes of Pennsylvania of this type is the shad. At the approach of egg-laying time, which is in the early spring, the fish leave their salt water homes and migrate long distances up the river. The eggs are deposited, and when hatched, the young soon migrate down the river to their real home in the ocean.

Fish that leave their fresh water homes and enter the ocean for the purpose of reproduction are called Catadromous fish. The only one of the fishes of Pennsylvania having this instinct, that I can recall, is the eel. The downward migration of the parent eel is in the fall of the year, and the upward run of the young seeking their fresh water homes takes place in the spring.

The forms or shapes of fishes depend a great deal upon where they live and how they feed. The water offers considerable resistance to their movements, so they are generally built to move through the water with the least resistance. Fish depending upon speed and strength for securing their food and escaping their enemies, are built for speed and strength. They have cylindrical bodies with much fin development; for an example, pickerel. Other fish of the same type of body, but of small fin development, seek their food by crawling on the bottom of the stream, and protect themselves by entering cracks or crevices in rocks, as the eel. Other fish are somewhat flattened, with the body tapering toward each end, and are covered with plates or scales. Fish of this type depend to a certain degree on their armor plate, or scales, and on their color for protection. The protective coloring usually blends with the aquatic plants, or the pond bottoms, making it difficult for an enemy to see the fish. While this affords them protection, it also enables them to approach their prey or food without being seen. A fair example of a fish of this type is the yellow perch.

The sunfish, an inhabitant of the still waters and the lakes of Pennsylvania, with its much compressed body tapering abruptly at both ends, would have little chance of fighting the swift water of our mountain streams in which the brook trout live. The sunfish, with its keel-like body, cannot keep its balance in the swift running streams, while the trout built on entirely different lines, can readily fight the current.

Fish vary in structure according to their feeding habits. Perhaps the mouth varies more with respect to feeding habits than do any other of its external structures; its variance in size, shape, and position depending much upon the food consumed. Fish that depend principally upon other fish for food have exceptionally large mouths armed with numerous long, hook-shaped teeth used for seizing and holding their prey. Examples of fish of this type are the pike-perch and the pickerel.

Sunfish have comparatively small mouths armed with teeth that enable them to crush the shells of small snails, or other crustaceous creatures. Again, if we look at the sucker, which is a bottom feeder, we will find that his mouth is located where it can be used to the best advantage. It opens downward and can be thrust forward and drawn back at will.

The bullhead generally feeds at night or amid the roily water of the bottom. His large mouth enables him to pick up choice morsels with little difficulty; his eyes are small compared with other fish, as he probably sees little while feeding but depends on his sense of smell and on his whisker-like barbels which are filled with many sense cells of feeling.

The exterior of the fish is covered by a slippery mucous commonly called slime. This slimy covering has many uses; it enables the fish to pass through the water with less resistance than if its exterior were of a less slippery nature. It affords protection from the enemy, as, when grasped, it is held with difficulty. This mucous is also a protection against disease.

Fish, like higher forms of animal life, are subject to disease, one of the most common fish diseases being fungus. A white, hairy growth attacks the fish on the part of the body where the slime has been removed. This gradually spreads over the body of the fish, generally resulting in its death. One way of removing the slime is to touch the fish with a dry object. Therefore, let us all remember the next time we are fishing and we catch a small fish which we wish to return to the water without injury, to be sure to wet our hands before touching the fish.

Under this outside slimy coat can be found the real covering of the fish. The coverings are of three different characters; the armor plate, which consists of diagonal whorls of solid plates of bone, each divided into scale-like sections, and so hinged together that while the whole fish is fully protected, it has freedom of movement. These fish, called Ganoids, lived many thousand years ago in what geology called the Devonian Age, or Age of Fishes, and we are led to believe that these armor-clad creatures were the beginning of our modern forms of fish. Some of these curious fish still exist in what

is believed to be almost the original form. Two of these are found in Pennsylvania, the gar pike and the sturgeon. Their survival through the many ages is probably due to this armor cover.

The naked covering, or that free from plates or scales, consists of a tough skin, such as that found on the eel and the bullhead. The scale variety, which is the covering for the majority of the fish of Pennsylvania is composed of a hard substance, one scale overlapping the other, much as shingles do on the roof of a house. Examples of the true scaled type of fish can be found in the yellow perch, the black bass, and the sunfish.

It is not my intention to take up the functions of all the internal organs of the fish, but when cleaning the day's catch, our anglers could hardly miss seeing the air or swim bladder. The various functions of the air bladder have been the subject of much discussion among scientists. Perhaps its chief function is to regulate the specific gravity of the fish, or in other words, to adjust the equilibrium of the fish in water. When empty, it increased the weight of the fish; and when full or inflated, decreases its weight. Oftentimes fish can be seen to lie almost motionless in the water. They are able to do this, probably, because of the power of inflation of the air bladder.

The fins are structures protruding from the body of the fish. They are made of rods or rays joined together by membranes. There are two kinds of rays or rods; one is without joints and tapers to sharp points. These rods are known as spines. There are not many people who are interested in fish and fishing who have not been cut by the spines on the yellow perch or sunfish. The other kind is made up of many little joints which are known as soft rays. These soft rays are found in the brook trout.

Because of this fin construction, fish are divided into two classes: Those having the stiff rods or spines on the fins are known as spiny-rayed fishes, and those having the soft rays are known as soft-rayed fishes. Examples of these two types of fishes can be seen by referring to the cuts of the yellow perch and the trout.

The shape and the position of the fins vary greatly in different species of fish. Space will not permit going into detail regarding these differences; but, as an example, let us take the tail fin of the trout and the sturgeon. In the trout this fin terminates very nearly square, and is adapted for swimming straight through the water; while in the sturgeon this fin is longer above than below, and this construction has a tendency to force the body downward to the bottom where this particular fish obtains most of its food.

The fins are named according to their location on the body of the fish. Some fins are paired and others are single. The paired fins will be taken up first, because they can be likened to the four legs of a higher animal.

The pectoral fins, two in number, are those situated in the place where the front legs of a higher animal are found. The ventral fins, two in number, are situated somewhat near the place where the hind legs of an animal are found. The dorsal fin is found on the back of the fish. Some species have two dorsals, as can be seen in the cut of the yellow perch; while other fish have but a single dorsal, as the trout.

The single fin situated behind the ventral fin and near the anus is the anal fin. The tail of the fish is called the caudal fin. In some fish, as the brook trout and the bullhead, a small fin is found between the dorsal fin and the caudal fin called the adipose fin. In examining the fins of fish, care must be taken not to confuse the adipose with the two dorsals found on some fish. The adipose fin is usually very small and contains no rays.

Fish possess all five senses, but the sense organs differ somewhat from those of land animals and some of them are not so well developed.

Sight: The eyes are without lids, since the water keeps the eyeballs moist and free from foreign matter. If fish go to sleep, it must be with the eyes wide open. The pupils are generally large in comparison with those of land animals. This is necessary under water where the light is not strong.

Hearing: The ear of the fish does not protrude from the head as does the ear of higher animals, but is in the form of a hidden ear enclosed in membrane; probably the water sends the sound wave or vibration directly to this drum. Just how well the sense of hearing of fish is developed is not clearly understood, but I am led to believe that unless sound is produced in such a way as to produce vibration in the water, fish cannot hear. Thus sound waves produced by the human voice on the shores of a pond are not heard by the fish, but if two stones are bumped together under the water, the sound produced can be heard by the fish.

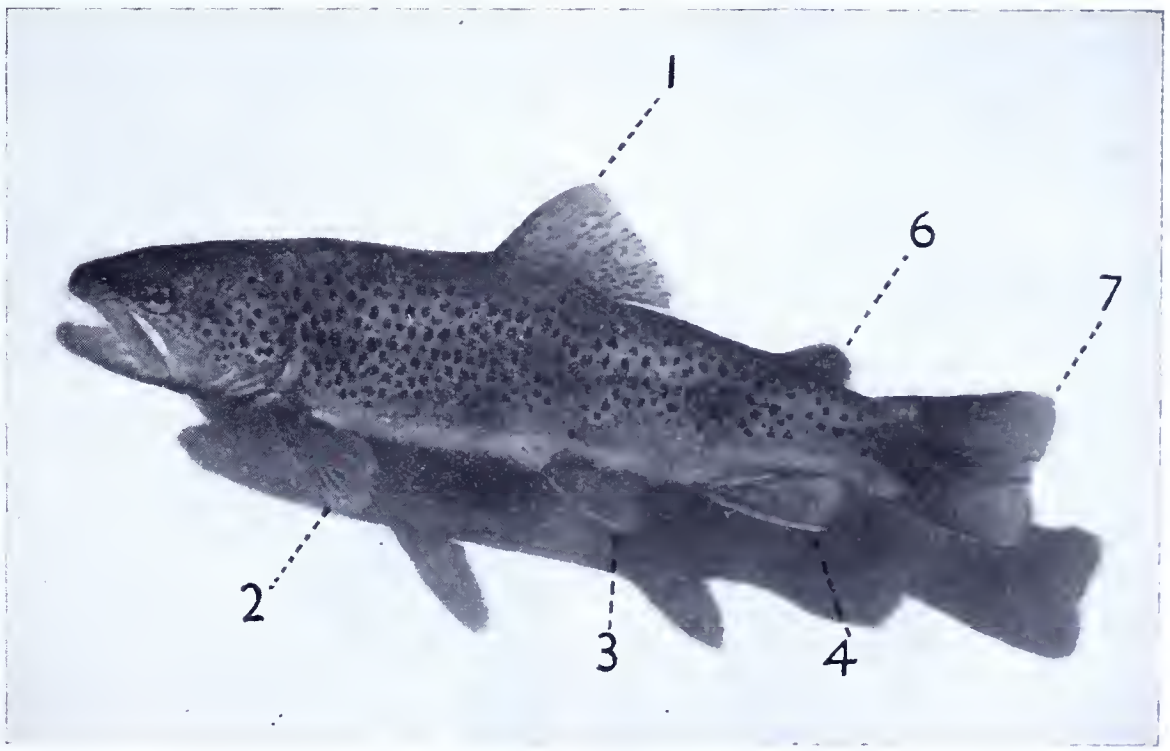
Smell: The nostrils are two small membranous sacs connected with the water by two small openings. Inside of these membranous sacs are many sense cells of smell. As with land animals, the sense of smell varies greatly with different species. The bullhead that feeds on the bottom in roily waters, probably, has a much keener scent than the pickerel that feeds in shallow water during the early morning when light penetrates the water.

Taste: Because fish swallow their food whole or in large pieces, one would assume that the sense of taste in fish is not very well developed; but from observation of fish being fed at the hatcheries, one is led to believe the contrary, as a fish seizing food that is spoiled or is not to his liking can readily be seen spitting it out.

Touch: The entire skin of the fish is provided with touch sense cells. On some portions of the body they are more developed than others. Some fish, such as the bullhead, are provided with barbels or feelers, and the sense of touch is very well developed in these organs, as they are probably used to assist the fish in finding his way near the pond bottom in roily water.

The respiration of land animals is the breathing of air into the lungs for the purpose of purifying the blood. In fish, respiration is the breathing of water over the gills for the same purpose. Fish breathe water instead of air, and the exchange of gases takes place in the gills, and not in lungs, as in the case with land animals. The gills are supported by gill arches, each gill bearing rows of gill fringes somewhat resembling red fringe. These fringes are full of small capillaries or blood vessels. The blood is brought from the heart to the gill fringes where the exchange of gases takes place. The impure gases contained in the blood pass out and the oxygen is taken in from the continuous stream of water which enters through the mouth and bathes the gill fringes on its way out through the gill slits. Because of this exchange of gases taking place in the gills, if the fish are not supplied with fresh water, they soon suffocate.

In some fish the pectoral fins can rightly be classed as an auxiliary respiratory organ. Their constant motion, when the fish is apparently motionless in still water, keeps a supply of fresh water moving in and about the mouth and the gills. This function of



THE BROWN TROUT—A SOFT-RAYED FISH
1. Dorsal Fin; 2. Pectoral Fins; 3. Ventral Fins; 4. Anal Fin; 6. Adipose Fin; 7. Caudal Fin or Tail.

the pectoral fins can plainly be seen by observing a common gold fish in an aquarium. Many times the gold fish lie in one place for hours. In the still water aquariums there is very little, if any, water circulation. Were it not for the constant motion of these fins, the oxygen in the water around the mouth and the gills would soon be consumed.

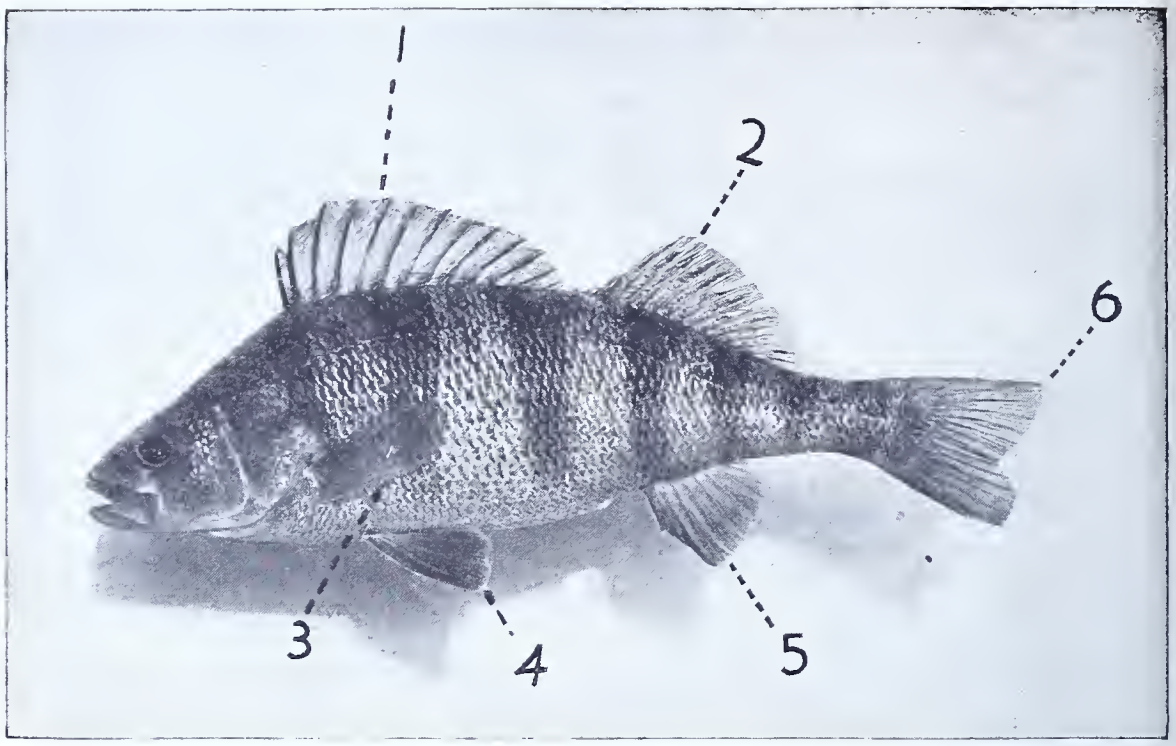
How Fish Swim: If our ancestors could have seen a modern submarine rise to the surface, turn around, submerge, and rapidly move away, they would probably have thought it alive and called it a great fish. We realize that the submarine is only a piece of modern machinery. Now let us look at a fish moving through the water and picture it also as a machine. In this living machine the hull of the ship is made up of the skeleton comprising the backbone and the tiny ribs, and is covered with the outer layer of scales, skin, or plates, as the case may be. The skull, coupled to the backbone in a rigid manner so that it can resist the forward thrust of the backbone without greatly varying its position, can be likened to the bow of the ship.

Inside of this hull are many complex parts used in keeping the ship in perfect condition, and for generating energy for locomotion. The digestive tracts, assisted by the circulation, are the huge boilers. The fuel taken in through the mouth in the form of food, is burned up or consumed in these boilers and is generated into energy. A portion of this energy is used in swimming or moving from place to place. The backbone, composed of a number of tiny vertebrae, can be likened to the propellor shaft, because at the end of this shaft is the tail or caudal fin used chiefly in the forward motion of the craft. In the bow of the ship, or the skull of the fish, is really the captain's cabin, because at this point many of the vital organs for controlling this live ship are found, including the sense organs which may be likened to our nose, our eyes, our ears, and the balancing organs. The most vital organ for controlling this ship is the brain, because from the brain to every part of the fish are lines of communication in the form of nerve cells, over which are transmitted the orders regulating the different functions of the fins, the body, etc. But in order to understand more fully how this submarine craft is handled, we shall take up each subject separately.

Locomotion

The chief propelling power in most fish is the tail or caudal fin, assisted by the body movement. When the fish moves forward, the tail is lashed from side to side, much in the same manner as an oar is used in sculling a boat. Generally, in the rapid forward movement other fins are drawn in against the body in order to lessen the resistance. However, when moving at a very slow speed, the tail fin is assisted by the pectoral fins. Oftentimes fish approach an object, and from fear, or some other cause, back slowly away. In this backward movement the pectoral fins do most of the work.

Most of us are familiar with the rapidity with which fish can swim among rocks, brush, stumps, etc. Nature has provided them with a wonderful stopping or breaking device to avoid injury by colliding with foreign objects. This efficient breaking system is very noticeable in the chain pickerel;



THE YELLOW PERCH—A SPINY-RAYED FISH
1. First or Anterior Dorsal Fin; 2. Second or Posterior Dorsal Fin; 3. Pectoral Fins, two in number; 4. Ventral Fins, two in number; 5. Anal Fin; 6. Caudal or Tail Fin.

the paired fins are spread and rigidly set. The caudal fin takes the reverse action of that used in the forward movement.

The tail fin, assisted by the body movement, is probably the chief steering device of the fish when it is moving through the water on a level plane. When it wishes to change its plane for a higher or lower level, the paired fins are used much as are the wings of a submarine or an airship. Probably here also comes into play the air bladder.

Fish, like the sunfish, with their compressed sides, have more difficulty in keeping their balance than do the pike or the pickerel with their more or less spindled-shaped bodies. Without regard to the shape of the body, all the fins assist in balancing, but when not in motion the paired fins probably play the most important part.

Reproductions

The normal fish of Pennsylvania reproduce by laying eggs, the eggs being deposited by the female. The milt or sperm is poured over them by the male. This process of depositing the eggs and their external fertilization by the sperm of the male is known as spawning. The fish that are common in our waters spawn but once a year. Fish of one species or another are spawning in almost every month of the year; for instance, the brook trout spawn any time between October fifteenth and December thirtieth; black bass in May or June; yellow perch and pike perch in April and May. The size and the number of eggs laid by a female depend upon the kind of fish or species, and age and size of the individual. As an illustration, a brook trout may deposit from two hundred and fifty to two thousand eggs, with a count of approximately thirteen thousand to the quart. A pike perch may produce from fifteen thousand to thirty-five thousand eggs and a count of seventy-five thousand to one hundred thousand to the quart.

The eggs deposited by the different species of fish vary greatly in appearance; some come forth singly and are covered by a sticky mucous. These eggs are called adhesive and they attach themselves to the clean rocks of the fish's nests, if the fish are nest builders, or to aquatic plants, roots, or sunken logs, and other materials, if they are not nest builders. The eggs of the sunfish and of the golden shiner are the adhesive type. Eggs that come forth singly and do not have this adhesive quality are called non-adhesive eggs. The eggs of the brook trout and the brown trout are non-adhesive. Others come forth surrounded and held together by a gelatinous mass, like the eggs of the bullhead and the yellow perch.

Some fish during spawning deposit their eggs by scattering them broadcast on the bottom; examples, suckers and pike perch. Other kinds, as the trout, build nests or homes into which they deposit their eggs, and when this is done, they desert their homes and let nature do the rest. Fish, whose eggs come forth in veil-like ribbons, like the yellow perch, deposit their eggs on submerged brush, water plants, old logs, or on anything that will keep them from settling to the bottom, where they would be smothered by sediment; and then the fish leave the eggs to their fate.

Some kinds of fish are endowed with a wonderful parental instinct. They build a nest or home, deposit their eggs therein and protect and care for the eggs and young fish until such time as each little fish is able to go its way. Of the fish with which I am familiar, I think the parental instinct of the common bullhead is most interesting; therefore, I am going to tell you of the home life of these blundering chaps.

In Pennsylvania the bullhead spawns in the month of June. Unlike the male bass, who prepares the nest and then goes forth to entice a female to enter the home, the bullhead does the courting before the home is chosen; and the bride, so to speak, helps to build the home. As spawning time approaches, the fish pair off and move about along the shore line, seeking a suitable place

to build the nest. Unless an abandoned muskrat hole or some similar excavation is found, the home building will be a long and trying task.

When a ready-built home is not found, the home usually consists of a hole dug in the clay bottom, about six inches in diameter, and from twelve to twenty-four inches deep. It usually takes from five to six days to complete the nest. The excavation is made with the sharp spines of the fins. The light sediment is washed out by the fin and the tail motion, and the heavier material is removed with the mouth. During the home building, the water in the vicinity is kept roily by their work.

After the home is completed, the eggs are deposited therein. They are not extruded singly, as are the pike and the trout eggs, but in a jelly-like ball, averaging about three and one-half inches in diameter when fully expanded, and containing from fifteen hundred to two thousand eggs. The eggs are of a rich amber color.

While the male parent may be a little severe in insisting that his mate help to prepare the home, once the home ties are established in the way of the little round ball of eggs, he is constantly assisting the mother to care for the eggs and the baby fish. The period of incubation is from ten to twenty days, and during this period either or both of the parent fish are constantly guarding the nest from invasion by other fish, snakes, turtles, etc., bent upon devouring the eggs. They are well able to protect their home, as in and about their home they are a blood thirsty and bullying set, with ever a lance at hand, ready to battle with an intruder at a minute's notice.

Just why the bullhead in the inland waters goes to all the trouble to prepare the hole in the earth for a home for the eggs and young fish, I am unable to say, unless it is for added protection. And again it may be from instinct. Many of the common bullheads inhabit the tidal waters of the Delaware River. At spawning time they seek the low marshy swamps on which to build the nest or hole. As the tide recedes, leaving the marshes dry, the parent fish, or the young, as the case may be, enter the hole when the tide goes out. The hole contains sufficient water for their needs until the tide comes in again. After the spawning season, the hole is abandoned, and the fish more or less follow the rise and fall of the tide. This instinct for protection from the receding tide may remain in the catfish of the inland waters.

During the period of incubation, owing to the poor circulation of the water in the hole, the parent fish are constantly keeping up a fin motion over and above the eggs, thus insuring aeration of the water. From time to time, the position of the ball of eggs is changed, usually by rolling it over with their snouts, but if the hole contains too much sediment to roll the eggs, the eggs are taken in the mouth by the parent fish and are blown out again. In this way they give it a new position on top of the sediment.

When the baby fish first break from the shell, they are very weak and helpless creatures, of a pale salmon color. Attached to the lower portion of the body of each baby fish is a yolk bag or food sac. This sac contains nourishment for the baby fish for the first five or ten days of its life. During this period of the baby fish's life, the parent fish will not permit them to leave the home. They keep a constant supply of water moving over them by the motion of the fins. If one tiny fellow, more venturesome than its brothers and its sisters, strays from the group, the parent fish sucks it up in his or her mouth and blows it back among the school. Perhaps for the first offense it is not blown very hard, but the second time it will learn to respect the authority of the father and the mother.

As the food sac is gradually absorbed, the little fish take on a darker color. After the sac is entirely absorbed, the little fish must have food. At this time the parent fish bring them in a school from the hole, and coax them along in search of food, which will consist of very tiny insects found on the bottom in the shallow water. Much as an old hen broods over her little chicks, either or both parents guard constantly the well-being of the baby fish.

After the babies' little stomachs are filled, the parents will bask in the sun being entirely surrounded by the school of baby fish. If an enemy approaches, by a quick motion of the body and the fins of the parent fish, the water surrounding the baby fish is roiled. The babies then quickly settle in the roily water to the bottom of the lake out of the way of harm, the parents seeking protection in the deeper water. When the enemy, bewildered by the roily water, moves away, the school is again collected by the parent fish.

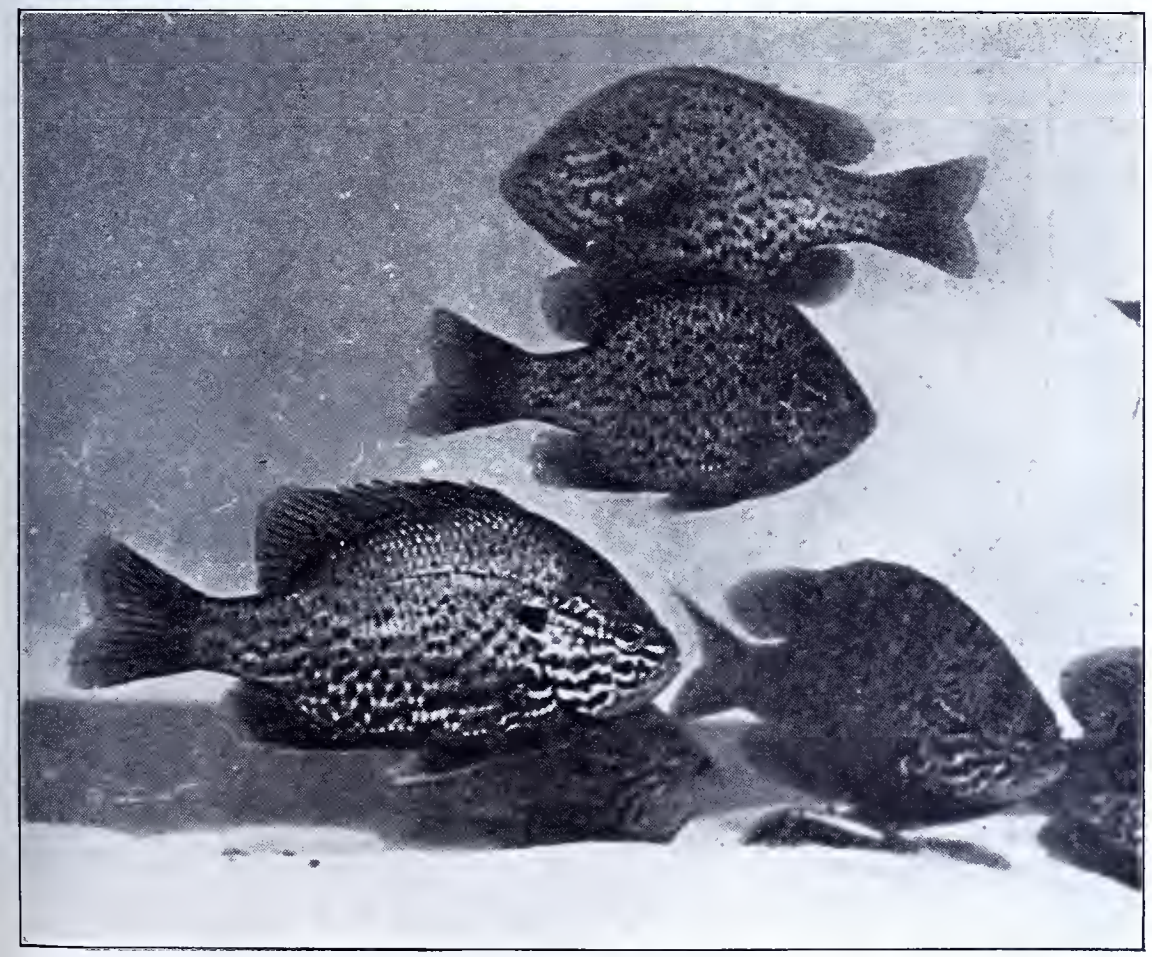
For the first few days, the school is not taken far from the home, but each day as the youngsters become stronger, they increase their range in search of food, returning home every evening. As the little fish gain in strength and confidence, they roam short distances from the parents, seeking places to their liking along the shore line. This place may be a shaded spot caused by a lily pad. The place not being large enough for all the school, many times they will mass together, all apparently trying to occupy the same spot at the same time, until there is danger of the weaker ones being suffocated. The watchful parents, noting this, crowd themselves into the school, and by upward motions of their bodies, scatter the youngsters in all directions.

The family by this time, having more or less confidence in themselves, resent this rough treatment and sometimes endeavor to leave home. If this happens to be the case, their minds are quickly changed, as the parent will pick up the runaway in its mouth and blow it back among its brothers with sufficient force to cause all thought of running away to leave its mind.

While the parents are very attentive to their young, willing, if necessary, to sacrifice their lives for their little one's protection, they nevertheless maintain rigid discipline in the family. If it becomes necessary to blow the little fish back among the school too often, the parent, apparently forgetting to blow it from the mouth, swallows it, thus ending forever the cares of the wayward one.

In about three weeks from the time the little fish first leave the hole, they will have doubled in size and will require a vast amount of food for their well-being; more than the parents can find for them when traveling in so large a school; hence the little fish will have to leave their parent's protection and shift for themselves. They break up in small groups and wander along the shore lines among the aquatic plant life.

(To Be Continued)

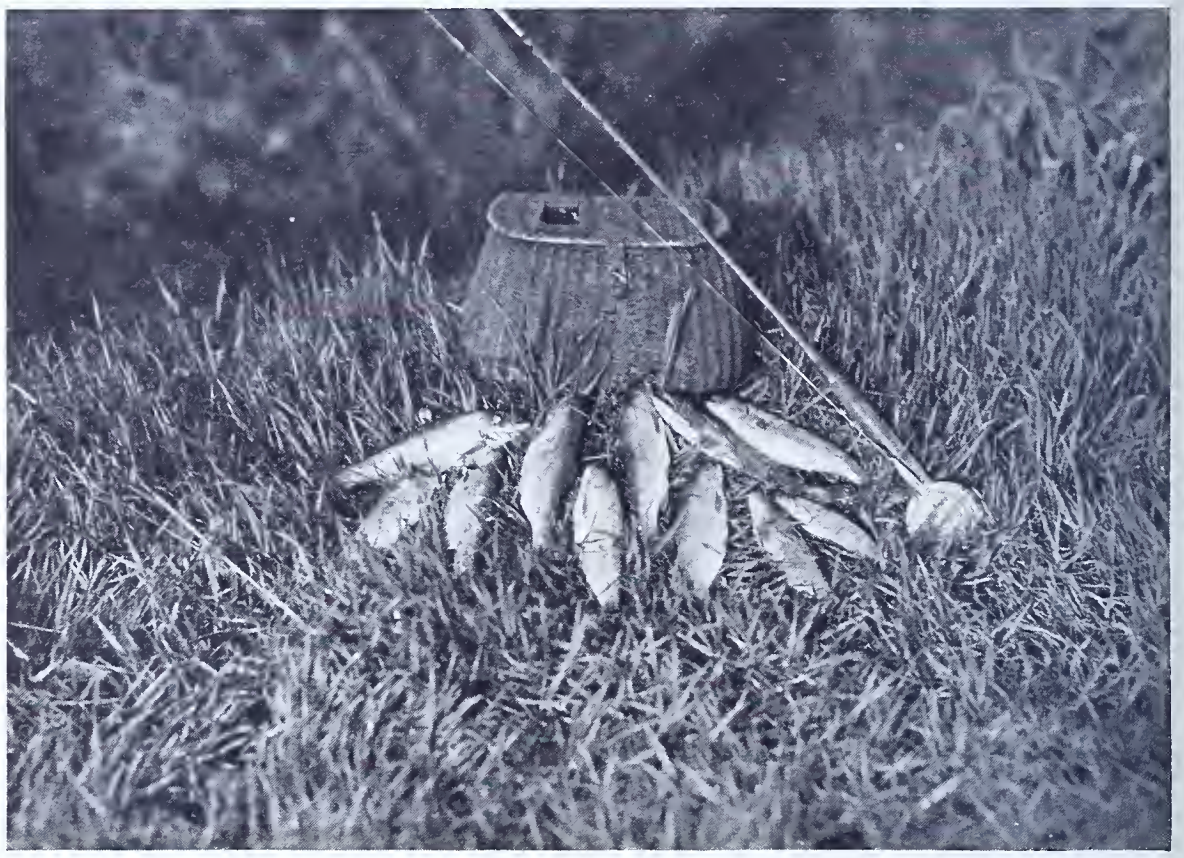


Common Sunfish or "Pumpkinseeds"

Better Trout Streams

Real Progress Must Result from Improving Trout Environment

By ALEX P. SWEIGART
Editor, PENNSYLVANIA ANGLER



IN OUR discussion on the necessity of artificial trout propagation in Pennsylvania last month, we stressed the changes that have occurred in virtually all trout waters during the past seventy-five years. It is increasingly necessary, in considering the trout fishing picture of Pennsylvania on a state-wide scale, that we link with our present heavy production of trout in the hatcheries a general improvement of environmental conditions under which stocked trout must live.

In part, this betterment of trout environment may be classified under two general heads—(1) Increasing cover and vegetation to provide more forage and (2) Improving spring sources of trout streams. We must realize that the basic ability of a stream to maintain trout is determined by suitable summer water temperature, aeration, an abundance of shore cover which aids in keeping the water temperature down, aquatic vegetation which assists in production of oxygen, and in development of natural forage in the form of aquatic organisms. As a trout producer, the stream should furnish the lower forms of life upon which the fish rely.

Flood conditions which prevailed on virtually all waters of the state during Mareh had both a beneficial and a detrimental effect upon trout streams generally. In the instanee of many trout waters, this greatly increased eurrent swept stream beds clean of mueh silt, particularly in lowlands. It may also be said in this eonnection that the floods formed new pools highly adaptable for trout in some streams. On the other hand, the high water dislodged gravel, small rocks, and even larger stones on many riffles, sweeping away insects in the nymphal stages and crustaceans. Many trout stream riffles, we believe, may have been injured seriously as food producers by the surging flood waters, although flood effects on individual streams varied according to the violence of the high waters.

The subject of shore cover on meadow trout streams has been stressed in other issues of the ANGLER. Low temperature feeder streams, rising usually in big springs and flowing only a short distance to their point of juncture with the main stream, particularly need an abundance of shore cover. The praetical trout fisherman has suffieient proof of the part played by this cold spring water in the life of trout inhabiting the larger stream. Frequently, on a hot mid-summer day, he may observe trout lying just where the feeder brooks merge with the big stream or below. Low temperature water emptying into major streams at intervals along their eourses is a vital asset to trout in such waters.

A Low Temperature Mountain Feeder Brook

Water at the spring source of a feeder brook may range in temperature during the summer months from 45 degrees Fahrenheit to 60 degrees or slightly higher. After bubbling from the spring and following its narrow channel for perhaps a quarter of a mile to its point of juncture with the larger water, it is essential to the feeder's usefulness that this temperature does not rise drastically. Here, then, we may consider methods of feeder improvement. First of all, there should be abundant overhanging brush and shore cover to furnish shade in holding the temperature down. Second, there should be sufficient current to insure swift passage of the water from its source to point of juncture. Logs or other obstructions damming the tiny stream should be removed, for the warming effect of the sun on such pools is frequently detrimental. Shade and speed of current are compensating factors to the effect of the sunlight on exposed sections of the feeders.

During the drought, many of these feeder brooks became clogged with silt, dead leaves and other obstructions owing to the reduced flow of the spring sources. Apparently, however, the underground water table has now been restored to some extent by heavy snowfall and rainfall. The increased flow which oceurred during the March flood served as a scouring agency for these feeder streams and probably their effectiveness as spawning areas for trout and temperature control factors has been increased.

Perhaps the ideal stream of this type, that is a stream at the peak of its usefulness, would have a course completely shielded by overhanging shore brush and characterized by swift riffles and a fair current in all of the shallows. Obviously, in most instances in agricultural distriets, this is not possible, but installation of tiny boulder wing deflectors to speed up the eurrent and encouraging more shore growth should be helpful. Good low temperature feeders on a large trout stream may easily mean the difference between poor and first rate fishing.

Essential though shore cover is to trout streams, the vegetation in the stream itself is just as vital. On limestone streams, watercress is an ideal plant for increasing available trout food. The famous Big Spring at Newville, Cumberland County, is an example of a stream with an abundanee of water cress. It harbors not only eress bugs in abundance but other forms of life including fresh water shrimps. This splendid supply of forage, in addition to many nymphal forms of insect life present in the stream, is available to the trout when needed and promotes not only rapid growth but high

coloration in the fish. It is possible, on streams of similar character, to introduce water cress by tossing clumps of it into the water and permitting the current to carry it until it lodges along shore. However, it is usually present in trout streams of this type. Other trout stream plants may also be introduced to advantage. Not only does this vegetation serve as a harbor for many forms of trout food, but it produces oxygen, and of course, additional cover. It also serves to absorb many injurious properties in the water. Occasionally spring feeders will be found that harbor little if any life and are not used by trout, although, from all appearances, this should not be the case. Usually a sufficient supply of oxygen is lacking in such water, and real success may be had in converting it to a first-rate feeder stream suitable for spawning and forage production by planting aquatic vegetation from a productive feeder. Low temperature tributaries to a trout water should in every instance possible be improved if the major stream is to be benefited to the utmost.

Pennsylvania trout waters fall under two general classifications, limestone and freestone. Obviously, of course, there are instances where a stream, particularly a larger stream, may combine limestone and freestone water, draining both types of soil in its course. Outstanding of the limestone streams are Spring Creek, Centre County, the Big Spring in Cumberland County, and Elk Creek, Centre County. Under the freestone heading fall most of the mountain streams in Potter and Tioga County, Kettle Creek, Pine Creek, Asaph Run and West Branch of Pine, for example. Northeastern Pennsylvania trout waters, the Lackawaxen and its tributaries in Wayne County and trout streams in the Poconos, for instance, are also freestone.

From the angle of food abundance and vegetation, the great limestone streams are in a class by themselves. Their very nature forms ideal environment for the development of crustacea as the lime from the water goes toward forming the shell of such tiny creatures as the fresh water shrimp. It is believed that these organisms, when comprising an important item in the diet of trout, tend to bring out brilliant hues of coloration in the fish.

Many of the freestone streams, however, are good producers of trout forage and it may be safely said that most Pennsylvania trout waters are of this type. To the best of our knowledge, the green drake or shad fly, which occurs in vast numbers during the latter part of May or early June on Spring Creek and Penn's Creek, does not occur in dense hatches on the great freestone streams such as Pine Creek on the North Tier. As a source of trout forage, the drake is not surpassed by any other insect. During the two or three years it spends in the pupal and larval stages in the streams, it is splendid trout forage. For that matter, when it literally clutters the vegetation on the shorelines during its brief life in the sub-imago and imago stages, the trout in streams where it occurs gorge themselves on this fly.

It would appear, when we consider limestone and freestone trout waters, that the latter would be most adaptable to improvement through increasing vegetation and cover, although the north tier waters in mountainous sections apparently have shore cover in abundance. Aquatic vegetation may serve as a basis for increased production of trout forage.

It is not difficult to check on the soundness of this assertion. Practically every trout fisherman has fished at one time or another on a picturesque little mountain stream, its course marked by miniature waterfalls, fast swirls and eddies. Probably he has noticed, as he fished this stream, that the rock bottom was comparatively bare, that in few of the back eddies if any was aquatic vegetation to be observed. Trout taken were small generally, many of them under legal six-inch length. An eight-inch trout was an exception. Here, the importance of vegetation in its relation to the food supply in trout waters was demonstrated forcibly. A meadow stream, perhaps no larger but rising in a deep-seated limestone spring, its winding course cutting under banks, with vegetation in abundance to be observed in back eddies and the more quiet pools, probably was found to yield plump, heavy-girthed trout, some of them 12 or 14 inches in length.

Fishing Creek, Columbia County—A Major Trout Stream Benefited by Low Temperature Feeders

A First-Day Fisherman on Spring Creek, Centre County

Trout forage production is influenced by many factors, however, flow, quality of water, bottom characteristics and temperature included. It follows that to improve any of these characteristics is to better a stream's possibilities for trout production. It may be said in closing that larger forms of trout food, such as minnows, are frequently only beneficial in the instance of certain species. The voracious run chub, for example, if too numerous in a trout water may be an active competitor for the very forms of food upon which brook, brown or rainbow trout rely. While it is true that these forage fish furnish some food for large trout, the damage they do by taking nymphs and other forage that smaller trout rely upon makes them at best a doubtful asset to any stream.

The problem of bettering trout environment in a state as highly industrialized as Pennsylvania is a difficult one, but the stream improvement campaign now under way in many counties is certainly a step in the right direction.

The Front Cover

The ANGLER is indebted to the Board of Game Commissioners for our cover page photo this month. It might appropriately be entitled "Dawn on a Trout Stream" or "Ready for the Morning Rise."

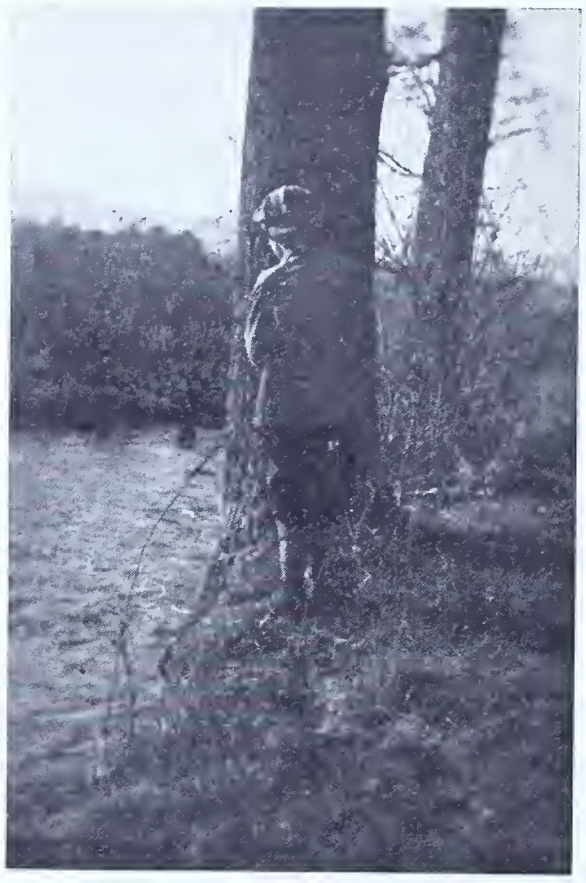
Teaching Fishing to Boys

By KARL KESEL
Administrative Assistant, Garfield Junior High School, Johnstown

THE Depression has directed our attention sharply to the problem of finding worthy things to do in leisure time. School people were aware of the importance of this matter, in the education of boys and girls, long before the Depression. Many of our junior and senior high schools have programs for handling those activities which lie outside routine school work. Athletic teams, bands, orchestras, glee clubs, dramatic clubs, and debating teams are well known. Along with these, there are a number of other extra-curricular activities which are now recognized as having a legitimate place in school life. These other activities are generally organized in the form of clubs, and some secondary schools make provision for them during regular school hours, while others conduct them in the children's own time, that is, after school hours. Yet, only a beginning has been made, and it may be said that the idea is not being carried out on a scale that is at all satisfactory or uniform. But there has been sufficient progress to show the directions in which further endeavor lie. Curiously enough, it does not appear that many schools have Fishing Clubs for their boys. There is no doubt at all in my mind that there are groups of boys everywhere in Pennsylvania who are eager to study the art of fishing in clubs sponsored by their schools. The field has been sadly neglected. It is all too evident that boys often have to learn fishing in haphazard ways from older fishermen who have no desire to instil into their pupils those ideals that are considered desirable among good sportsmen.

Fishing is no longer a simple art, and the very fact of its modern complexity is one of the things that makes it all the more interesting. Give a boy a chance to see that there is more to fishing than hook, line and bait and he is likely to want to find out some of the other possibilities. By teaching them, consistently and methodically, those things that go into the making of a good fisherman, we may hope to put the sport on a level at least higher than that which now recognizes as the "best" fishermen he who brings home the most fish or he who wins a prize for having caught the largest fish.

Seven years ago a number of boys from grades nine and ten, ages fourteen to sixteen, asked me to start a Fishing Club and be their leader. This, by the way, is the ideal way for the start of any kind of a school club, that is, to have the pupils themselves ask for something that they feel they need, which is quite different from grown-ups starting the club around some activity which their adult minds think good for the children. I consented to take charge of the Fishing Club, but not without a little feeling of insufficiency, for my own experience and knowledge in fishing were not extensive. We organized our club like others in the school. The boys elected officers, including a Treasurer who never had to function in that office because we did not



"Before School" on Opening Day of Trout Season this Year

find it necessary to collect "dues." I had vague ideas as to what to do in getting a start with a club-program, but there was plenty of interest and enthusiasm in the group, and we came through our first year in good shape. We held meetings once a week after school hours, and this is still our practice. The experience gained the first year showed me how to make improvements in the following year. For one thing, I found it better to delay organizing until after the Christmas holidays, rather than maintain the club through the full school year. We have plenty of time from January to June to go over all the things worth considering, and the shorter period is just long enough to insure constant interest. Also, the seasonal advantage in having things in full swing through the Spring months is quite important.

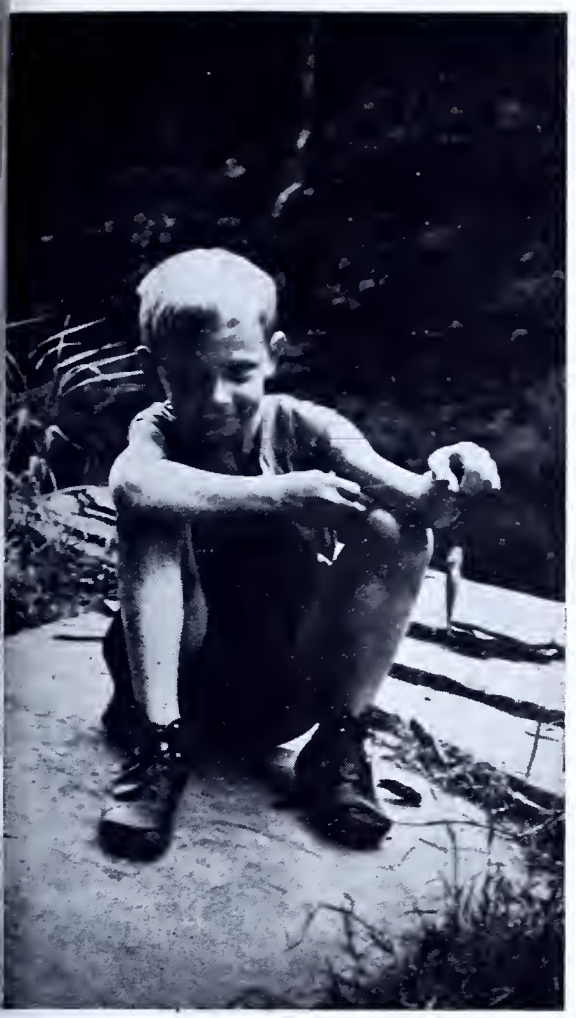
The aims that were set up at the beginning have not been greatly changed. Briefly stated, they are:

1. To gain a thorough knowledge of the fishing laws of Pennsylvania.
2. To know our common fresh-water fish and their habits.
3. To know fishing tackle and how to use it.
4. To learn how to make lures and simple rod repairs.

In addition to these four objectives we have been emphasizing another during the last few years, namely, the matter of stream pollution. It appears that the present generation of fishermen does not seem to be making a great deal of progress in solving this problem, in spite of strenuous efforts. If the younger generation of fishermen is made fully aware of its menace to their sport they will grow up fully prepared to fight against it successfully. We have some good examples of pollution not far from home, and there is no difficulty in getting boys to see what has been done and how it might have been prevented.

The successful carrying on of school clubs is based on the sound principles that children learn by doing and that active participation is greatly superior to passive interest. So we emphasize activity in our Fishing Club. Later, I shall tell how this is done, but I mention it at this time because it is fundamental in carrying through a program successfully. Children love to do things for themselves, and when the subject lends itself to the practice, the ideal way to teach is to organize so that each child may take part. Now, this constitutes a serious problem, and one that is often impossible to achieve. Fortunately, in teaching there are many opportunities for getting boys to participate, and we have always taken advantage of this fact. Of course, everything done in a club of this kind is voluntary. Members are not compelled to attend meetings, but we keep a record of attendance, and lagging members are interviewed by the boys themselves. If a boy drops out it is usually due to interest in some other activity which meets at the same time, and he simply makes a choice between the two. We are never concerned about the loss of a member, because there is usually somebody waiting to take his place. Even in poor years, when it has happened that our enrollment has dwindled below the number with which we started in January, we are quite satisfied if we finish with a small group of real workers and learners. Usually we go through with twenty-five or thirty boys. Ups and downs from year to year are not a matter to cause worry or a feeling of failure, for other clubs fluctuate in the same way. I am always sure of starting with ten or fifteen older boys who were in the club the preceding year, and these experienced members give valuable assistance in recommending new members and in helping with certain phases of instruction.

Teaching cannot be well-done without the aid of instructional material, and this is particularly true if the aim is to teach thorough pupil-activity. It is not easy to find sufficient material of the right kind for boys who really want to learn, for their interest and curiosity drive them into new fields constantly. I had no difficulty in getting magazines for their use, and our school library now subscribes to five good outdoor periodicals. Back numbers, which have accumulated through the years, are always accessible, and, when January comes around they are subjected to fresh attacks. We also have some of the standard books on fishing, and have regularly made use of certain inexpensive handbooks that are put out by one of the magazine publishers. In



Dick Smith, son of Burton Smith, Kennett Square, Delaware County, exhibits his first catch. Proud? And how!

the beginning I wrote to dealers and manufacturers about our club and told them what we were trying to do, and I asked for copies of their catalogues. Without a single exception, I received the aid requested along with warm endorsements of our aims and with offers of further assistance. Acting on these offers, I made further requests, and thus secured quite a collection of real material, which we use partly for demonstration and partly for exhibition. A leading manufacturer sent an exhibit showing the stages in the making of steel and split-bamboo rods. A New York dealer not only sent liberal samples of hooks, but also a valuable mounted collection of many styles and sizes. Other firms gave us small assortments of lures, samples of lines and other articles, and still others sent quantities of special pamphlets dealing with subjects of interest. The importance of real material cannot be too strongly stated, for a boy learns quickly and thoroughly what we want him to learn when he sees and handles the thing itself. Of course, it is quite possible to over-do this matter of asking manufacturers to give their products without cost, and I have always kept this fact in mind. It is conceivable that numerous requests for such assistance would prove a burden to fishing tackle companies, and it is far from my intention to give the impression that boys' clubs could easily raise funds in their communities to buy what they need for a start.

As I have stated above, we emphasize activity always. Our indoor study of fishing tackle starts with a wide survey of catalogues and periodicals. It is not important that we use current publications, as I want the boys to go through the pages and see what an array of equipment goes with the sport. They get their eyes opened, and then they are introduced to real rods and to one piece of tackle after another. Then come lessons in their correct use, which is followed by outdoor practice. A flyrod and a casting-rod are always available for those boys who want to practice during noon hours or after school. Sometimes I assign older boys with experience to act as instructors for the beginners.

But it is not euough to hold meetings, discuss or demonstrate things of interest, arrange for practice, and then let it go at that. Therefore, I have gradually developed a regular system of planned teaching which is kept attractive and interesting by being presented informally. I know definitely what I want to do from week to week, but I am always careful to keep away from a program that is wholly mechanical. I merely make suggestions and throw out hints, depending on the interest of the boys to keep the thing rolling. Once started, it only becomes necessary to keep such control that the "rolling" will be in the direction desired. In order to be sure that the "lessons" (for that is what they amount to) are "going across" successfully I make use of mimeographed tests, which are given at the completion of a piece of work. These tests are being revised and added to constantly. The idea of using tests may seem dry and destructive of interest, and I hasten to explain that our tests act in quite the other way, for they are of the so-called "objective" type familiar to boys and girls who are now in school. Objective tests are so constructed that they can be answered quite simply and with little writing. This makes it possible to cover a great many questions in a short period of time. Sixty or seventy-five questions can easily be answered and checked withiu an hour. Most pupils like to take tests of this kind, because they cover a wide range of ideas and act as a challenge to their thinking.

Let us suppose that we are ready to take up the study of our fishing laws. I tell the boys that we are going to devote three meetings to this subject, and I lend each one a copy of the laws. Then I point out that it is quite impossible for them to learn *all* the laws in the pamphlet. So we mark the pages which deal with those regulations that are most important. And, at the next regular meeting, they are to be ready with questions. At this meeting we always thresh out the puzzling little things that are sure to come up in discussion. If interest lags, I try a few questions based on actual violations. More often than not the boys have plenty cases ready for discussion—either cases they have read about in the newspapers or ones they have heard about from older fishermen. At the next meeting we complete our "study," if it may be so called, and then we are ready for the test at the third meeting. Sometimes, I help them to prepare for the test by handing out old tests to go over, assuring them that they will make good scores on the current test if they can answer everything correctly on the old ones. Throughout our study of Pennsylvania's Fishing Laws I try to keep the thought clear that these regulations are primarily for the purpose of making better fishing for everybody, and that their enjoyment of the sport depends largely on how much they strive to obey the laws and see that others do the same.

I suspect that many of my readers are wondering if boys can actually be made to study such a dry thing as laws and then enjoy taking a test to find out how much they know. I must admit that setting up ideals is not enough to make boys go to work. It would be fine if a sixteen-year-old boy could be made to study the fishing laws just for the sake of knowing them, but the cold fact is that this can only be done effectively by providing some kind of incentive. So, I provide incentives in the form of prizes for those who make the highest scores, usually giving three prizes for each contest. This is the general procedure for other subjects within our field. It is not necessary to give expensive prizes. Ours usually consist of small articles of equipment, often nothing more than a few lures, an assortment of hooks, or a leader and a fly.

Through the use of pictures I give tests on the identification of the species of fish; and the test on equipment makes use of the real material in our collection plus a few things from my own tackle boxes. In this test they are required to name correctly a number of articles, the identification being made through numbers or letters which are attached. I also give a test on hooks, which requires the ability to recognize the style of hook, its size, and its particular use,—if it happens to have a special use. I usually close the season by having a general testing program in which the rewards consist of full-day fishing trips on some distant stream during vacation.

Getting a Good Start on a Central Pennsylvania Bass Stream

I devote one full meeting to the split-bamboo rod alone, showing how it is made up, how it is wrapped, and how simple repairs may be made. In another meeting, or perhaps two meetings, we take up the making of artificial flies and other lures. I am not an expert in this, and I am unable to show the boys much beyond the material and equipment needed to turu raw material into a finished product, but this is the sort of thing they like. Those who lack patience soou give it up, but there are always a few who can be counted on to finish the seasou as amateurs of fair ability.

If we do not look with scorn ou still-fishing, we at least strive to show that it does not promise nearly as much in real sport as does fly-fishing and bait-casting. It is true that some of our boys never grow beyond the bait-fisherman stage, and

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Fly Tying Class at State College

By Dean R. L. WATTS, Pennsylvania State College

The second annual fly-tying class, sponsored by the fish committee of the State College Conservation Association, met every Tuesday evening during the month of March. Larry Madison, one of the most skilful members of the class last year, was the able instructor. He clearly and graphically illustrated on a blackboard every step of the procedure. The enrollment last year was 20; while 43 sportsmen, some of them from Lock Haven and Jersey Shore, were members of this year's class. As it was impossible for one instructor to handle efficiently such a large class, various members of the 1935 group served as "laboratory" assistants.

A study of the personnel of the 1936 class reveals some interesting facts. It included college administrators, teachers, students from freshmen to seniors enrolled in a great diversity of curricula, scientific investigators, fish and game wardens, laborers, a minister, banker, janitor, general mechanic, plumber, bookkeeper, and insurance agent, and automobile mechanic.

The class was honored by the attendance of E. K. Hibshman, Secretary of the Penn State Alumni Association; Theodore C. Carlson, traveling game protector; George R. Green, head of the Department of Nature Education; J. O. Keller, Director of College Extension; Gordon L. Trembley, fish research specialist; E. I. Wilde, Professor of Ornamental Horticulture, of State College; and Rev. George N. Young of Jersey Shore.

A simple outfit of essential equipment, including vise, hooks, body materials, tying thread, feathers, wax, and cement, costing only $1.80 was purchased by each member. Spring clothes pins were used for tweezers, and each one supplied his own pair of small scissors. Many in the class became very skilful and were able to tie flies that should satisfy the most particular anglers; all of them succeeded in fashioning lures that delighted their eyes and which, if properly presented, will take fish.

The types of flies tied included the usual patterns of wet and dry flies, fan-wings, spent wings, bivisibles, bucktails, and nymphs.

A happier and more enthusiastic group of anglers could not be found anywhere. This delightful form of craftmanship will enable them, as George Harvey, the instructor last year, says "to catch big fish in their mental meanderings throughout the year." Furthermore, it will help to make better sportsmen and to encourage the use of artificial lures instead of natural baits.

An exhibit of 26 to 34 flies made by each member of the class attracted much attention at the recent fishermen's dinner of the Centre County Federation of Sportsmen's Clubs.

Well, sir, t'other mornin' I got me out o' bed right early an' headed fer the gap fer a trout fish. The crick hed dropped consid'able an' I hed ketched some right lively crickets the day afore under some old fence rails. Funny about it, but Seth he hed the notion ter be out a-fishin' jest about the same time, an' as I traipsed up the log road right close ter the crick, who do I see but Seth. But he didn't see me an' I ain't sayin' mebbe. He was too dang busy.

Thet hangout o' the big trout I was a-tellin' ye he was tryin' ter ketch is right aside the road, an' there was Seth, his pole bent nigh double, a-fightin' thet gol-wallopin' ol' speckled trout. I ain't one ter be givin' advice at no sech time, so I jest kept still an' watched Seth. He's a right smart fisherman, I'm tellin' ye. Be gorry, thet ol' trout headed fer the log jam four times an' four times Seth managed ter turn him. The second time thet fish almost made it, but now he was tirin' an purty soon it was all over. Nigh onto the purtiest speckled trout I ever seen, he was, sixteen inches long, broad an' heavy with a red belly an' red spots thet looked half as big as dimes. "Shucks," sez Seth, as he lifted him out. "Now then I got ter find me another big un ter work on." He's a great feller thet way, an' I figgers most times he'd sooner jest watch the fish then ketch 'em.

He ketched thet trout on a minnie fished on a wire back o' a swivel. One o' them there painted minnies ye find in the run back o' Seth's place. They got orange fins oftimes.

Thet mornin' I ketched me some nice mountain trout on them crickets, one o' them about 12 inches long, but I reckon there ain't any trout agoin' ter be taken on the crick this year ter beat Seth's fish.

LIGONIER STREAMS FURNISH CATCHES

According to available reports, streams of the Ligonier Valley provided good fishing for trout on opening day of the season. Three fishermen from Latrobe, trying their luck on Roaring Run, scored as follows: Frank Robb, 15; James Corson, 13; and George Brown, 11. H. O. Witherow of Ligonier, a veteran fisherman, caught four trout, the largest measuring 11 inches. A 14-inch trout was taken by Charles Gibson of Loyalhanna.

JUNIATA SUCKERS

During the latter part of March, tributaries to the Juniata River furnished some fine sucker fishing. Lost Creek, Juniata County, just above its point of juncture with the river, was a favorite fishing area. One day's fishing yielded Carl Suloff, of Cuba Mills, a catch of 25 suckers; a Lewistown fisherman whose name could not be learned, caught 18; Lester Helwig, John Price and Bob Sweitzer, all of near Mifflintown, caught 8 suckers, 7 suckers and 3 suckers respectively on the same day.

GOOD CATCHES MADE ON SMALL TROUT WATERS

Opening day of the trout season produced some nice catches of brook trout on smaller streams in northeastern Pennsylvania counties, according to Warden Myron Shoemaker of Laceyville, Wyoming County. His report follows:

"Practically all streams were high and either roily or partly so with the exception of the smaller tributaries coming from the

mountain sections. On these small streams there were a good many trout caught, all brook trout, and some very nice size.

"The North Branch of the Mehoopany Creek in the lower waters where it had a chance to clear somewhat, from the dirty water from above caused by a slide, produced a few very fine rainbow trout. The first fisherman this morning on this stream whom I met was Albert Bernosky, Pittston, Pa., who had two rainbow trout about 12 inches each. He is about 19 years of age and was the happiest fisherman I saw all day. He appears to be a real good young sportsman as he said he had all he wanted for the day.

"Other fishermen on this stream were Horace Sick, two rainbow trout and one brown trout; C. F. Bonham, two brown and to rainbows; E. H. Myers, one brown trout, 19 inches in length. All these men from Tunkhannock, Pa.

"The Mehoopany Creek was high and a little dirty and produced practically nothing. However, on the tributaries there were many fishermen. Among them being County Treasurer Roy Jones, Wyalusing, Pa., who had 14 brook trout. Also from Wyalusing were Romayne Sterling, 15 brook trout; Cap Martin, 15 brook trout; Ralph Dibble, 14 brook trout; and Dr. C. M. Stevens, 13 brook trout.

"From Pittston, Pa., were Attorney J. R. Langan, 11 brook trout; Chas. F. Sewatsky, 15 brook trout; James Cosgrove, 11 brook trout.

"Paul Hair, Athens, Pa., seven brook trout; Howard Post, Athens, Pa., eight brook trout.

"Mrs. Mildred Feddish, Hazleton, Pa., four brook trout, and P. B. Brown, Hazleton, Pa., six brook trout.

"Many other fishermen had from one to four each and the total catch would run about 175 on these tributaries of the Mehoopany Creek.

"By all appearances these small tributary streams were heavily flooded and many trees were entirely taken out by the roots and lay in the streams at numerous points. The catch would indicate that the floods did no serious damage to the fish life in these streams."

TEACHING FISHING TO BOYS

(Continued from Page 9)

we leave that matter in their own hands. I am fully satisfied if our yearly product includes only fifteen boys who think of fishing as an art requiring skill and knowledge rather than a mere pastime involving hook, line and bait. Sufficient time has elapsed, since our club started, to check up on results and to discover if we are sending out real fishermen. It is quite possible that some of our boys would have gone in for fishing anyhow, and that the club has done little that they would not have done for themselves. But this applies to a small number; for the others I have sufficient first-hand information to know that the club has served to give them a good start.

An Anadromous fish is a marine fish that runs up river to spawn. The shad and the striped bass represent this class.

Montgomery Sportsmen Back Willow Campaign

PERHAPS the most encouraging feature of the Pennsylvania fish conservation program this spring is the splendid support being given the Fish Commission's "Plant A Willow" campaign. That the need of shore cover on most meadow trout waters is recognized by our sportsmen was recently demonstrated by the action of the Montgomery County Sportsmen's Federation in sponsoring the planting of 12,200 willow cuttings donated by Adolf Muller, former chairman of the Board of Game Commissioners.

It was particularly fitting that the Montgomery group should take a leading part in this "better stream cover" campaign, for J. Hansell French, Secretary of Agriculture, who hails from near Collegeville, Montgomery County, was foremost in advocating the "Plant A Willow" drive last year. Intensely interested in conservation of fish and game and an enthusiastic fisherman, Secretary French is Vice-President of the Montgomery County Fish, Game and Forestry Association, an active unit in the Montgomery Federation.

The following report of the Federation meeting at Narberth on the evening of April 20 is taken from a local newspaper.

ADVOCATES WILLOW PLANTING

"Elaborating on its program of stream improvement and forest conservation in the county, the Montgomery Sportsmen's Federation met at Narberth last night in a quarterly meeting to increase the scope of its activity.

Harry Z. Cole, district fish warden, reported National Youth Administration members had helped to plant 12,200 willow cuttings, taken from the DeKalb Nurseries of Adolf Muller, here.

In addition to this work, the County Federation last night bought and paid for 6,500 trees which will be planted in upper Montgomery County. These trees will include 1,000 black walnuts, 3,500 Norway spruce, 1,000 hemlocks, 500 Scotch pines and 500 red pines.

The trees will be planted under the direction of E. F. Brouse, district forester, with the assistance of Works Progress Administration employes.

Stream Improvement Program

A new stream improvement program has also been drawn up to be accomplished with federal aid, when new appropriations are forthcoming. This includes:

1. Rebuilding of Stahler's dam on the lower stretch of the Unami Creek which is open to the public near Sumneytown.

2. Rebuilding of the big Knickerbocker ice dam at Green Lane.

3. Full stream improvement on Mill Creek in Lower Merion Township.

4. Rebuilding of two dams on the tributary of the Pennypack Creek at Huntingdon Valley. Flooding of an abandoned mill race of 200 yards at that place for the purpose of starting a fish propagating pool.

5. Rebuilding of the Ches-Nor dam on Branch Creek, near Telford.

J. HANSELL FRENCH

MORE BROOKIES TAKEN BY WARREN FISHERMEN

The following communication has been received from Warden R. C. Bailey of Youngsville, Warren County, concerning the trout season opening in Warren County.

"We had beautiful spring weather here for the opening day of trout season but our streams are still high and water too cold for the fish to show much activity, not as many anglers out as I expected to see; however, some good catches were taken although no large fish reported.

"I spent most of the day on the Farnsworth, contacted 22 anglers there whose combined catches was 46 rainbow and 28 brook trout. Frank Sehmonsky of Clarendor had 13 and Paul Remy nine rainbows from this stream. We next went to Brown Run, contacted nine anglers with catches of 54 brook, six brown and one rainbow trout. Walter Mathyer, Warren, had 15 brooks; L. L. Williams, Warren, 13 brooks; and P. L. McCune, Clarendon, nine brooks from this stream. Brown Run is stocked with brown trout, but the brookies seem to have predominated the first day."

Warren VanDyke Enjoys Fishing

Hon. Warren Van Dyke, Secretary of Highways in Governor Earle's cabinet, spent the opening day of trout season on Rapid Run in Union County. Warren, as he is familiarly known among his hosts of friends, is a devotee of the great outdoors, and thoroughly enjoys a day on a trout stream whether he catches any trout or not. He firmly believes the sport and recreation by far surpasses the mere bringing home a creel of dead fish.

The opening day was a complete success for him. While he caught and landed three beauties, he also had the pleasure of meeting a large number of his old Union County friends, who entertained him in one of their camps where he was treated to some real country ham and eggs, which he says are only second to their wonderful trout.

HUNTINGDON SPORTSMEN STAGE FISH CONTEST; URGE SPORTSMANSHIP

Announcement of the annual contest again this year among the members of the Huntingdon County Game, Fish and Forestry Association will take a large number of the big membership of this group to the streams. Last year considerable interest was aroused not only from the angle that prizes were offered but due to the fact that the sportsmen like to fish and enjoy the sport. The prizes are for the LONGEST fish—the committee urges all members to join in the competition.

The prizes to be given are listed below:

First Day—For longest brook trout, a $7 doubled tapered line; longest brown or rainbow trout, a $7 double tapered line.

Season Prize—for longest brook trout, an $18 fly rod; for longest brown or rainbow trout, an $18 fly rod.

The contest will be governed by the following rules: No member can win more than one prize. However, a trout caught on the first day need not be entered in the first day contest if the owner prefers to enter it for the season prize. The winners of the fly rods in the trout season contest cannot compete for any rods which may be offered in the bass season contest, but may compete for any of the prizes other than the rods. All fish entered in the contest must be caught in Huntingdon or adjacent counties and no fish taken from a private reserve or club's waters is eligible for entry. The "Fishermen's Paradise" on Spring Creek is eligible water and all trout taken there may be entered. First day entries must be registered not later than midnight at one of the following designated points: Huntingdon—Corcelius Hardware Co., Miller Hardware Co., or Mark's Restaurant; Smithfield—I. O. Weaver's store; Mapleton—Walter Andrews; Mount Union—D. C. Goodman Hardware; Orbisonia—Homer Wear; McAlevys Fort—William Miller's store; Petersburg—Kirkpatrick's restaurant or Huston's store; Marklesburg—C. B. Boyer; Alexandria—Russell Butler and William Reed; Cassville—Miller Green.

Don't forget, the length of the trout is what counts in this contest. Ask your checker to forward your entry at once to Maurice Banker, Huntingdon. Rainbow trout are classified with brownies.

The Huntingdon County Game, Fish and Forestry Association throughout the past winter season has aided materially in game conservation and it is generally conceded that many of our "woodland friends" have wintered through as a result of the splendid effort of this organization. With the passing of winter and the advent of another fishing season the association members plan for fish conservation along with the pursuit of their sport.

Sportsmen may ask: "What can I do, as an individual, to aid in the effort to provide better fishing conditions?" In reply to the question the following suggestions are submitted:

Most creel limits, some size limits and other regulations in most fish laws are totally out of keeping with the present supply and demand. Many sportsmen have set the right example by establishing their own code of limits which are well within the law. Ten trout per day should be enough to satisfy any real sportsman, and many are satisfied to creel half that number of fair sized fish in the interest of improving the sport. Fortunately when you fish with the artificial fly, your sport need not be limited to the fish in your creel, for if the fish are in the stream and taking your fly, you can catch and return them unharmed to your hearts content, enjoying all the thrill and keeping five or six of the best ones. When the standard of sportsmanship amongst fishermen comes to the point where this practice is the rule, rather than the exception, there is no question but that fishing will be greatly improved.

Keen interest in stream improvement has been evinced by sportsmen everywhere, individuals may do their part by planting willows along the open banks of their favorite streams. Too many areas on meadow streams lack shade and shore growth and are therefore not inhabited by fish. The root system of the willow is extensive and serves to create additional cover above and below the water line. Shade, however, is not the only consideration in willow planting. Trout particularly need insect food as a major source of forage, and additional foliage along trout streams provides just that much more growth in which insect life may thrive. The plan of planting trees along streams is generally approved by landowners because root systems in stream banks prevent valuable meadow lands from being washed away. Young willow branches, from 14 to 24 inches long and from ½ inch to 2 inches in diameter are suitable for planting. Use a sharp stick to force a hole in the ground near the stream, the hole should be of such depth to accommodate half the length of the sprout. The butt end of the sprout should be inserted in the hole, and earth tamped down about it. From 2 to 4 rows of plantings are advisable and planting should be made in May or early June.

RED LION SPORTSMEN ORGANIZE NEW CLUB

With better fishing and hunting and closer cooperation between sportsman and landowner as their goal, sportsmen in Red Lion, York County, recently organized the Red Lion Fish and Game Association. The following announcement concerning formation of this active sportsman's group has been received from Raymond Ellis, secretary:

On March 9th, a group of sportsmen of Red Lion and vicinity met in the Leo Independent Fire Company House and there dis-

cussed the possibility of forming a fish and game association. After a round table discussion the body decided to form an association to be known as the Red Lion Fish and Game Association. The purpose of this organization is to bring the farmer and sportsman together to a mutual understanding for the conservation of wild life and the betterment of hunting and fishing. The members were urged to talk better sportsmanship and to work together to secure all the members they can possibly get. The association is also opposed to stream pollution, this being one of the worst things that the streams of our state are subjected to.

The association is headed by one of the best known and informed men in this vicinity on wild life and fishing, William Shenk. The chairman of the board of directors is headed by another well-known sportsman and angler, Claud Herrman.

AWARD FISH PRIZES AT LEHIGH SMOKER

Over 700 sportsmen attended the annual smoker of the Lehigh County Fish and Game Protective Association at Dorney Park near Allentown, on the night of April 3d, and it was agreed that it was the finest affair yet staged by this progressive organization. With President Robert L. Plarr in charge, a six-hour program of moving pictures, speeches and prize awards was carried out, culminating in the serving of elk sandwiches cut out of the roasted carcass of a 700 pound animal purchased at the Trexler game preserve in Lehigh County. The speakers were Seth Gordon, Executive Secretary of the Board of Game Commissioners, Charles Wellington Wessell, Chief of the Division of Propagation and Game Farms, and Joseph H. Mellon, of Philadelphia, the latter representing the Board of Fish Commissioners. During the evening a beautiful gold watch chain with a gold knife, suitably engraved, as a fob, and a crystal charm, enclosing a trout fly, was presented to George Zimmerman, secretary of the association since its organization in recognition of his 15 years' service. Seth Gordon made the presentation speech.

During the winter the association conducted a vermin control contest, and as a result notwithstanding the unfavorable weather during the first three months of the year, the following casualties were reported; crows, 1053; stray cats, 30; hawks of the different species, 34; starlings, 370; weasels, 14; and a number of other predators. The prizes, awarded on points, were awarded as follows: First, William A. Moyer; second, Chester A. Guth; third, Michael Todd; fourth, Joseph Gehris; fifth, Alex Scott; sixth, Lester Rehrig; seventh, Howard DeLong; and eighth, Frank Yoo.

The fish prizes for the 1935 season were awarded as follows:

Brook Trout

First prize, a fly rod, to Charles H. Nehf, for a fish 14⅛ inches long; girth, 7⅜ inches, and weighing 1 pound and 2 ounces. Caught July 25th in the Little Lehigh Creek. Lure, minnow.

Second prize, three imported tapered leaders, for a fish 12¾ inches long; girth, 6⅝ inches and weighing 14 ounces. Fish caught April 17th in the Little Lehigh. Lure, artificial fly.

Brown Trout

Only prize awarded to Samuel E. Berkemeyer, for a fish 25 inches long; girth, 10 inches; and weighing 3 pounds and 11 ounces. Fish caught May 24th in Wallenpaupack Creek. Lure, artificial fly. Prize—leather bound creel with leader bag attached.

Seth Gordon presents George Zimmerman with watch charm at Lehigh Smoker. In group, left to right: J. H. Mellon, Fish Warden; Milo Miller, Treasurer of Lehigh group; George Zimmerman, Charles Wessell of Game Commission, Seth Gordon, and Robert Plarr, President of Lehigh Association.

Tom Forsythe, Lewistown, with a fine creel of Spring Creek trout, caught opening day.

Rainbow Trout

Only prize, an imported silk braided line, awarded to Warren W. Yeakel, for a fish 19½ inches long; girth, 12 inches; and weighing 3 pounds, 14 ounces. Caught April 15th in the Little Lehigh. Lure, worm.

Largemouth Bass

First prize, awarded to Stanley Youkonis, for a fish 20½ inches long; girth, 15 inches; and weighing 5 pounds, 8 ounces. Caught August 10th, in Lake Wallenpaupack. Lure, plug.

Second prize, awarded to Samuel E. Berkemeyer, for a fish 20¾ inches long; girth 14 inches; and weighing 4 pounds, 4 ounces. Caught in Lake Nipperwein on September 28th. The prize was a casting rod. Lure, plug.

Third prize, Samuel Youkonis, a set of fishing plugs, for a fish 18⅜ inches long; girth, 13½ inches; and weighing 4 pounds. Caught October 26th in Lake Wallenpaupack. Lure, plug.

Pickerel

Only prize, a fine reel, awarded to Marvin Weiss, for a fish 24½ inches long; girth, not given, and weighing 3 pounds, 9 ounces. Caught in Deer Lake on October 26th. Lure, plug.

Wall-Eyed Pike

Only prize, an imported silk braided line, awarded to Stanley Youkonis, for a fish with a length of 27⅛ inches; girth, 13¾ inches and weighing 7 pounds. Caught in Lake Wallenpaupack on October 26th. Lure, plug.

LANDS BIG SUCKER

Alton Meloy, cashier of the Port Royal National Bank has the distinction, according to Warden C. V. Long, of East Waterford, of having caught the largest sucker taken in Juniata County waters this spring. His catch was made on March 24th, and the fish weighed three and one-half pounds.

Tackle-Smasher

That old tackle-bnsting brown trout of Horse Valley Run, Perry County, was very much in angling news abont two ycars ago. Then it is suspected, he was finally removed by unethical fishing methods, and anglers who fishcd Horse Valley mourncd his passing.

For that reason, if no other, there's real news in the report from Warden Charley Loug of East Waterford, Juniata County, to the effect that a worthy successor to the giant brown trout is once more lurking in the deep pools of this beautiful mountain streaiu. Latest advice from that particular sector on the trout fishing front indicates that this big brown trout has already accounted for the tackle of two fishermcn this season.

We can hardly blame our eorrespondent for failing to divulge the hide-out of the old timer, bnt at least he has given us information as to the stream haunted by the "tackle menace."

Photo by Dr. B. D. Hetrick

Dunbar Creek, Fayette County Trout Stream

LANCASTER ANGLERS OUT IN FORCE

Trout fishermen in Lancaster County on the opening day of the season, found most trout streams in good shape and the weather ideal. A number of nice catches were reported.

From data compiled by the Federated Sportsmen's Association of Lancaster County under the direction of Richard Sullenberger, secretary of the Association, approximately 400 men lined the banks and waded through three streams under observation.

From Fishing Creek, Peter Spicer of Lancaster, took the largest trout yet reported. The brown was sixteen inches long. Many other men from Philadelphia, Reading, Harrisburg. Lebanon and the Western part of the state fished the length of Fishing Creek.

Sullenberger said that 150 men fished in that creek alone. Among those from Lancaster who were successful were:

Gus Kirchner, 2; A. Condo, 4; Herbert Pontz, 4; Walt Martin, 2; Edward Mowrer, 3; and Spicer's big one. All fish except Spicer's were between 8 and 10 inches long and all were caught in Fishing Creek.

In Seglock run, about 150 men fished the stream and the catches were from four to five fish each. The average size was nine inches.

Suecessful anglers from Landisville, fishing in that vicinity, were: Levi F. Eby, 9; C. Shelly, 3; H. Ruhl, 2; Henry Howell, 2; W. I. Hassler, 2; R. B. Myers, 5; P. Garman, 4; C. Kauffman, 2; M. E. Gross, 1; Joseph McMillen, 2; H. M. Reed, 2; J. Dierolf, 1; H. H. McComsey, 2; F. Furlow, 3; R. Haldeman, 1.

The streams in the neighborhood of Ephrata were thoroughly whipped by many of the borough residents. Those who returned with fish are: Arvel Enck, 8; I. L. Sprecher, 10; Will Weaver, 2; John Rupp, 8, one of which was 14 inches long; William Wolf, 13, one 15 inches long; Earl Root, 3; Frank Flickinger, 2; Roger Witman, of Reading, 1; David Coble, 5; Hayden Frederick, 7; Phares Frederick, 7. The popular streams were Trout Run, Middle Creek and Hammer Creek.

Four veteran fishermen of Elizabethtown reeled in their limit of trout at Ashland, near Pottstown, within a few hours.

The successful fishermen were Charles Boggs, J. N. Olweiler, Herman Good and George Doyle, who brought home 24 trout, all of which measured about twelve inehes in length.

LAURELS TO THIS HOOP SNAKE YARN

To Robert J. Wheeler of Allentown we must hand the laurel wreath for this snake story he has submitted for publication in the ANGLER. Concerning this yarn, he writes:

"I take pleasure in sending you several stories, among them a hoop-snake story that should end once for all any controversy over this ereature. I told this one to the late Vice-President Marshall one time and when I had finished, he arose and offered me his official badge, given him by the Indiana State Association of Liars."

The yarn follows:

"Ever since Mother Eve told Adam that story about the snake and the apple, people have been interested in snake stories. Somehow or other the snake always gets the blame. Whether he is good or bad, big or little, pretty or ugly, folks regard him as an undesirable citizen and every one, with or without 'sin,' casts the first stone at him.

"However, not all snakes are bad. Even in Pike County we have what the natives call 'good snakes.' The funny little 'garter' snakes that hunt in the grass are useful. They eateh frogs, rodents, spiders, etc., and keep these pests from increasing too rapidly. Then there is the family of racers—brown, blue, with rings about the neck; these are pretty and harmless, also great hunters. The blacksnake, that bully of the woods, though non-poisonous and harmless to humans, is the greatest hunter of them all, even given to hunting and killing the rattlesnake and eooperhead. The blacksnake often lives about buildings and catches rats and mice in barns.

"One day I was fishing at Peck's Pond and I met a group of high school boys from Slatington. These boys were up on a week-end trip to study wild life. They had a wire eage in which they kept two large rattlers. While I was looking at the rattlers, one of the boys brought another snake to show me. It was the largest puff adder I had ever seen. Holding the snake close to the head, the boy blew his breath into the snake's faee. This angered the puff adder and he puffed himself up like an inner tube. The puff adder is a funny snake. He looks very fearful as he suddenly inflates and grows twice his natural size right before your eyes. But he is very harmless and makes a nice pet.

"Of course, there are bad snakes in Pike eounty, but they are shy and since the auto has eome the bad ones are killed off so closely that we have to hunt hard to find one anymore.

"Snake stories from Pike county are fearful and wonderful. Probably there is more real art in the native snake stories than in those told about any other woods' eitizen. The native imagination is quickened when it dwells on the native snake. Stories are told that have all the elements of genius behind them. The best part of it is that the natives really believe the stories they tell. Now you know more than half the value of any story is the apparent sincerity of the narrator. Whether the snakes are really as big and dangerous as we are led to believe or whether the natives are equipped with special expansive eyesight, I have never been able to decide, but I know that they do tell stories about some big snakes or big stories about some snakes. Anyway, the stories sound terrifying if not always convincing.

"One of the snakes which people believe lives in Pike county is the "hoop" snake. This fellow is red, white, blue, green, orange, black, old rose or maybe lavender in eolor, according to the state of vision of the native who sees him. His length is variously estimated to be between one and fifteen feet.

He lives in the flat country along the rivers, where the hills do not cramp his style. Unlike perfectly normal snakes, the hoop snake does not walk or crawl. He rolls along like a hoop. How he performs this feat is a mystery but folks tell about seeing him whirling along the road with his tail in his mouth, for all the world like a hoop. Hence the name hoop snake.

"Although I lived in Pike county for a great many years, I never saw a hoop snake, but then I never saw a sea serpent either, so that does not prove anything. But lots of Pike county folks say they have seen hoop snakes, so who am I to spoil a good story.

"But to get back to the main idea. One time I met a man from Lackawaxen, who told me such a good hoop snake story that I feel I will not be fair to the traditions of the great fraternity of story tellers if I do not pass this on to others and so give it the publicity it deserves. I told this story once at a banquet and the diners promptly elected me to membership in the Pike County Ananias Club, even though I tried to impress upon them that I was merely relaying the story, as it were: however—

"There was a man who lived at Lackawaxen, Pike county, along the great and beautiful Delware river, who tilled a little farm right in the town. He had one field below the Erie railroad tracks, above the summer cottage of Zane Grey. This man had corn planted in the little field and one morning he was out early hoeing the corn (I might say they still hoe corn in Pike county). After working hard for some hours, he paused to rest, leaning on his hoe handle while he wiped the sweat from his face with a large red bandanna. Just as he was about to resume work, he happened to look up the corn row and there to his horror he beheld a big hoop snake bearing down the corn row and it was so close when the farmer saw it that all the poor man could do was to stand there terror struck and hold the hoe handle in front of him as though to shield himself from the strike of the snake.

"It was all over in an instant. The snake, seeing a victim in front of him, struck at the man but luckily pierced the hoe handle instead. Galvanized into action by his narrow escape, the man dropped the hoe and fled to the house.

"I should have explained that a hoop snake does not have fangs like the rattlesnake but has instead a horn on his tail. When the hoop snake goes out looking for trouble, he takes his horny tail in his mouth, forms a hoop and rolls away at express train speed. Inside his mouth he keeps a poison bag which spreads poison over the horny tip of the tail and so the hoop snake is always armed when he meets a victim.

"When the hoop snake struck the hoe handle, the horn penetrated through and because it is barbed the snake could not withdraw it, so he was fast to the hoe handle. When the farmer fled he was so frightened that he did not go back to see what had become of the snake until sundown. You know all snakes which get into fights die at sundown. Well the farmer crept back and parted the corn until he reached the row where the snake lay. Sure enough the snake was dead, but the hoe handle was so affected by the poison that it had swelled up like a big saw log. This gave the thriftful farmer an idea. He hurried back to the barn and hooked up the team; then returning to the field, he hauled the log to Charley Redding's mill, had it sawed and made into shingles, with which he roofed his barn.

"Yes, the hoop snake is a bad one. It might be worth while for all the folks to go to Pike county the coming summer to keep a good watch for hoop snakes. The Smithsonian Institute at Washington, D. C., has a standing offer of $50,000 reward for a hoop snake, dead or alive. If anyone finds one I will be glad to come and catch it and we can split the reward."

JUNIOR WALTONIANS LAND

On March 24, the Upper Darby High School staged a "Hobbies Show," open to a varied line of exhibits from postage stamps to mechanical appliances. Junior Waltonians saw in this show an opportunity to preach the doctrine of conservation, and arranged a display of live and mounted specimens of game and fish. A varied assortment of bird feeding stations and shelters was included, together with bird-houses, arms, ammunition, and fishing equipment. Placards demanding conservation, restoration, reforestation and water purification formed an appropriate background. A feature placard stated "MAN ALONE IS THE CONTAMINATOR," while the League's conservation platform received a conspicuous position.

Members of Delaware County's Junior Chapter were in attendance, dressed in outdoor togs, emblazoned with hunting and fishing licenses. When the judges had completed their work, the coveted blue ribbon hung over this exhibit, which acted as a constant magnet to the large crowd which poured into the building all evening.

Hats off to Delaware County's Junior Waltonians, and especially to President Edward Watts, Vice-President Blair Kennerley and Secretary Harry Houch. These lads have a true grounding in conservation, and are destined to spread these doctrines among their associates.

WATERSNAKE CONTEST

That the sportsmen of Pennsylvania are taking an increasing interest in reducing the number of watersnakes on our trout and warm water streams is demonstrated by the contests being staged by various organized groups. Mahanoy City Fish and Game Association members recently announced a watersnake killing contest, according to word received from E. F. Gruber of Mahanoy City.

Mr. Gruber mentioned one incident that bears out the belief that watersnakes are highly destructive to trout. While stocking a stream, they found one of the reptiles with a trout that had been released only ten minutes before.

First prize in the contest will be a fly rod or fine casting reel; second prize, a reel or hunting knife; third prize, a fishing line or knife and fourth and fifth prizes membership in the club.

FISHING ALONE?

I didn't believe I'd go this year,
No, I didn't see how I could.
I mused in the flickering light
Of the burning, smoldering wood.
My Friend you see had answered the Call
The one that we all will hear,
And I knew I'd have to go alone
If I went at all this year.
We'd always gone together
My fishing friend and me
I knew it wouldn't be the same
I knew that it couldn't be.

The firelight dimmed and lessened
Then vanished completely away;
And in its place I could see his face
And I could hear him say!
"Don't grieve, Old Friend, I'll never be
Any further away than your thoughts of me.
Go where we always went, Old Pal,
Don't sit at home and brood;
Fish the same pools and riffles,
Travel the same old road.
You'll hear the waters murmur
You'll hear the woodbird's song;
Go where we used to go, old friend,
And take my memory along."

Bob Keagle, Hazleton.

BUFFALO DINNER

Stressing the importance of fishermen reducing their kill on our trout streams and explaining the work of the Fish Commission in furthering the cause of better fishing, Dan R. Schnabel, member of the Fish Commission, spoke before more than 500 members of the Lancaster County Fish and Game Association and their guests at a jamboree and buffalo dinner in Lancaster on April 7th. This splendid talk by Board Member Schnabel, better known as "Uncle Dan" was a feature in a fine program at the unique affair.

Officers of the association are Ira E. Mellinger, president: B. F. Wiggins, Chas. I. Dornbaugh, R. E. Wissler and William H. Kopp, vice-presidents, Otto H. Koerner, secretary, and Daniel R. Raley, treasurer.

BOARD OF FISH COMMISSIONERS
HARRISBURG, PA.

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HERE AND THERE IN ANGLERDOM

New Kensington sportsmen mourn the death of Norman H. Flemm, of Arnold, recently. An ardent sportsman and conservationist, Mr. Flemm was a leader in the drive in that section of the state for better fishing and better hunting. He was an organizer and past president of the Arnold Sportsmen's Club, and a special warden of the Fish Commission. His death followed a week's illness with pneumonia.

Warden Frank Brink, of Milford, Pike County, reports that on opening day he checked 42 fishermen on Pike County streams, who had taken 94 trout. Largest of the fish was a 13½-inch brook trout caught at Child's Park. Weather for the opening in Pike, he writes, was cold and blustery, undoubtedly affecting the catches.

Included in those anglers making good catches of trout in McKean County waters on opening day, according to Warden J. Albert Johnson, of Bradford, were Harvey Quinn, Paul Brookler, Harry Johnson and Clyde Johnson, all of Bradford. These anglers made excellent catches on Lynn Brook and the West Branch of Tuna Creek, their fish running in length from 7 to 11 inches.

One of the nicest catches of brown trout made on the Yellow Breeches Creek in Cumberland County so far this season was that of C. H. Lohry, of Lemoyne. Early morning fishing on April 17th, with minnows yielded him a catch of five brownies, from 11 to 18 inches in length.

Special Warden Nick Ratamess, of Berwick reports some good March sucker fishing in the Fishing Creek sector of Columbia County. M. F. Culver, of Berwick, made a fine catch on March 10th, and Nick, who measured his fish, bears him out. The four suckers, taken in Fishing Creek, measured 10 inches, 12 inches, 14 inches and 18 inches respectively. To date the largest sucker reported from Fishing Creek was landed by Mike Zinzal, of West Berwick. It measured 20 inches in length, according to Ratamess, and another one taken by Zinzal measured 14 inches.

And while on the subject of sucker fishing, the catch of two feminine anglers, Mrs. Robert Draher, of Milford, Pike County. On March 16th, according to Warden Frank Brink, Milford, Mrs. Draher caught 9 suckers in the Delaware River that had a combined weight of 30 pounds, 2 ounces, averaging better than three pounds apiece. She was accompanied on her fishing trip by a friend, Mrs. Emily Fuller, who derived plenty of enjoyment in watching Mrs. Draher land the string.

Ten-year-old Alonzo Estep, son of Mrs. Bertha Estep, of Bellefonte, early on the first day set the pace for large sized trout when he landed an 18½-inch brown trout in Spring Creek, but one of the largest trout reported on the opening day was exhibited by Leslie Thomas, who hooked a 20-inch rainbow trout in Spring Creek that weighed 3 pounds and 2 ounces.

Lake Wallenpaupack, famous bass and pike fishing water in Pike and Wayne County, has been yielding some mighty fine brown trout this spring, Pep Singer, who lives at the lake, told Warden Frank Brink recently. On the first four days of the trout season, according to Pep, a party fishing in the vicinity of his camp caught 12 brownies. The smallest brown in the catch measured 17 inches in length, while all of the other fish were from 20 to 23 inches. Since that time, four more brown trout, all above the 17-inch mark have been landed.

Clyde Canouse, of Milford, fishes dry fly exclusively, regardless of weather conditions. Early this season, while casting under the arch bridge, where Roosevelt Highway crosses Vandermark Brook, he hooked into an 18-inch brown trout. The big brownie was landed after a tough struggle.

Mrs. Draher of Milford with her catch of suckers. Mrs. Fuller at right.

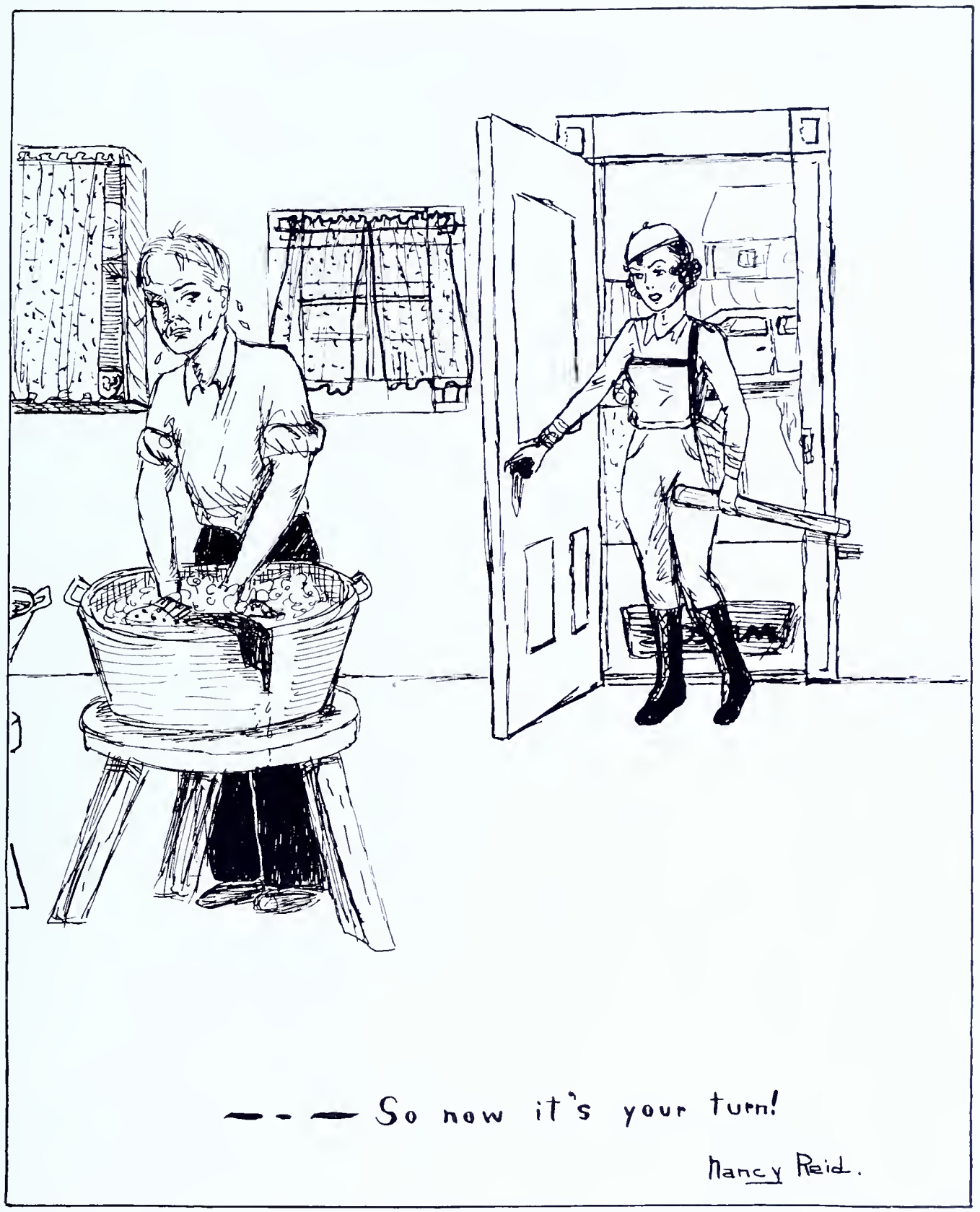
Kishacoquillas Creek, in Mifflin County, provided some first rate trout catches early this season. Mr. and Mrs. F. A. Myers, of Shippensburg, scored with 15 and 13 trout respectively on opening day, the fish ranging in length from 7 to 11 inches. Elmer Alexander, Belleville, caught 15, from 9 to 11 inches and Mrs. R. E. McCoy, Lewistown, 8 from 7 to 10 inches in length. The largest trout taken in that vicinity to date, according to Warden C. V. Long, of East Waterford, was a 15½-inch brownie. It fell to the lure of a garden hackle presented by 11-year old Shirley Alexander, daughter of Elmer Alexander. Shirley had just caught a 14-inch sucker on opening day. Her after-school fishing trip was made perfect a few minutes later when she landed the brownie. She is now "fishing princess of Belleville," writes Charley.

Fourteen suckers taken from the Juniata River above Lewistown, apparently enter the record classification. Joe Mowery, Lewistown, who made the catch, landed the fish on April 3d, according to Warden Long. The smallest sucker measured 14 inches in length, and the largest 22 inches, weighing an even five pounds.

A fine 14-inch brook trout was caught on opening day of the season on the West Branch of Hammer Creek, Lebanon County, by Charles Uhler, of Lebanon, according to Special Warden Walter Collins, of Avon, Lebanon County. Collins also reports that sucker fishing was good in the county this spring. While fishing in an old quarry hole at West Myerstown, Paul Brant caught two big suckers, one measuring 17½ inches, and the other 19 inches. Frank Houtz and Melvin Donmoyer scored with 6 suckers and 3 catfish in the Swatara Creek at Greenville. John Renic and Pete Fink caught 10 suckers, ranging in length from 10 to 17½ inches in the Swatara at Union Deposit.

BIGGEST RAINBOW

Riley Swane. Cumberland, Maryland, has the distinction this season to date of having landed the largest rainbow trout to be taken from Pennsylvania trout waters. While fishing in Evitts Creek, Bedford County, at the head of Lake Koon, he caught a rainbow trout measuring 24½ inches in length, 11 inches in girth and weighing 4 pounds 5 ounces. It was landed on a 5-ounce fly rod, according to Warden Harry Moore, Bedford County.



Nancy Reid, 13, Daughter of Board Member Kenneth A. Reid, Depicts the Successful Termination of a Fishing Couple's Argument—that is—from Milady's Viewpoint.

RISING BROOK TROUT

Photo from Original Oil Painting Submitted by Edgar W. Nicholson, Member of Fish Commission, Philadelphia

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Vol. 5 No. 6

PENNSYLVANIA ANGLER

JUNE, 1936

EDITORIAL

FOR BETTER BASS FISHING REDUCE YOUR KILL

The question asked us most frequently, and which we are never able to answer, is "Where can smallmouth black bass be purchased?" These questions come from many private clubs and individual owners of private waters wherein they would like to establish black bass fishing. Not a week goes by without receiving a number of these inquiries, many from clubs in other states, and when we are not able to give any of them the desired information, there must be a very good reason why this information is lacking.

Here evidently is a very large potential market, and as it is without any supply to fill this demand, there must be a very logical reason why this unsupplied market exists as, practically in every other demand the supply is more than abundant to fill every demand. There are five commercial trout growers in Pennsylvania, who annually produce several millions of marketable trout. The same is true in practically every other state where trout waters are to be found, but even in those states where bass fishing takes precedent over every other type of fishing, it is impossible, so far as our knowledge goes, to purchase smallmouth black bass. There are instances where a few largemouth bass are offered for sale, but these are largely salvaged through the drawing down of large ponds and lakes where these fish reproduce under their natural conditions.

The value placed on an article so rare as our smallmouth bass is naturally very high on account of the supply being so very limited that one wonders why there have not been more efforts and progress made to supply this demand. The man who can successfully propagate and produce these fish in any considerable number has his fortune made.

It is fair to assume from the commercial price paid for the few largemouth bass that are offered for sale annually that the value of a 12-inch smallmouth black bass would be equivalent to the price paid for a Pennsylvania fishing license. If then, the gamest of our game fish in the waters of Pennsylvania, are so valuable, can we afford to go on slaughtering them in the ruthless manner in which our bass have been killed in the past years, and still hope to have good fishing as a sport?

The waters suitable in Pennsylvania to smallmouth black bass are very limited, and each and every year our bass fishermen are increasing, and the problem now facing us is: Can our very limited bass waters continue to furnish sport for this ever-increasing demand, unless we are willing to practice some very strict conservation in our bass fishing? It is most encouraging to note the increased spirit of a higher type of sportsmanship and conservation among our bass fishermen, as they more and more realize the value of these game fish as an attraction for the angler. Bass fishing in Pennsylvania can be made to furnish as good sport as can be found anywhere, if we are willing to forego or subdue a little of the killing instinct that we have been inheriting all down through the generations since the Stone Age, when our forefathers lived altogether on what they killed.

The Board is of the opinion that more bass under 9 inches in length are killed in trying to disgorge a swallowed hook than are those over 9 inches in length taken by our fishermen. A few months ago an article appeared in this publication asking the fisherman to "lose a hook and save a bass" by cutting the snell and allowing the hook to remain in the bass, rather than attempt to disgorge a swallowed hook. In this way, many thousands of bass can be saved each year, and all such small bass, carefully released, will be legal bass next year.

It is also most encouraging to note that many bass fishermen, who formerly fished live bait exclusively, are now exclusively fly fishermen, are enjoying a much higher type of sport than was formerly experienced in bait fishing, and naturally are injuring less fish.

As the bass season is just around the corner, it is sincerely hoped that our fishermen, when they go astream, will not be shooting for the legal limit as it is always a question whether a real SPORTSMAN requires a legal limit for his kill or catch. But most SPORTSMEN regulate their take by the supply, with always due consideration for their fellow fishermen. Let us not feel that simply because we have invested a dollar and a half in a fishing license, we are entitled to take and kill as many fish as we can, but rather adopt the principles practiced by that fine sportsman, Harry Shawkey of Warren, whose twenty-year record was published in the April number of the ANGLER. During twenty years, he caught a total of 8,081 bass, yet killed during those twenty years, 340, or an average of 17 a year, and during his later years, since he is fishing exclusively with fly, his average kill has been a mere half-dozen. Yet no one enjoys greater sport than he.

The recent resolution passed by the Sharon Sportsmen's Club to limit their daily catch to five bass rather than ten, the legal limit, is another step in the right direction for true conservation and sportsmanship. Let us establish permanently in our minds, when on the streams, that these very valuable fish are worth many times more to the sportsmen of Pennsylvania out there alive in the water, where they can give you battle from time to time, than they are as dead, smelly fish in your creel, for the fact remains true, as has been said many times, a live fish in our waters will furnish much sport for the future fisherman, but a DEAD ONE can't.

Commissioner of Fisheries

Fly Casting For Bass

By Myron E. Shoemaker

AT the close of a recent sportsmen's gathering a stranger approached me and said, "I would like to fish with flies but every time I try it I have no success either with catching fish or with casting." This fellow went on to relate that so many of his friends were taking up fly fishing that he rather felt all alone when he went out with them. His friends were having some real sport and he wanted to share at least a little of it. He stated further that not one of his companions knew enough about fly fishing to pass the knowledge along to him. He had purchased the full equipment but could only manage to get the line wrapped about his body or hang it up in the trees.

This incident, no doubt, is a daily event on the streams every fishing season. Many fishermen would turn to fly fishing if they could at least get some information to get them started properly. Volumes have been written on fly fishing the past several years but some of the newcomers have failed to benefit from the articles because they have just become interested. In view of this and to assist all who are now interested, I trust the diagrams printed along with this humbly submitted article will be of benefit.

The first thing, of course, is the proper equipment for fly fishing, which consists of a good rod of the desired length, a proper sized line for the rod, leaders of desired size and lengths and lures and other necessary equipment which is always added as the fisherman progresses.

If the fisherman desires to start out for bass he should select a rod of from 9 to 10 feet in length weighing from 5 to 7 ounces. The 9½ foot rod of about 6 to 6½ ounces seems to be the standard. Due to the heavier type of lures and the wind resistance of some of them the rod should not be one of those stiff cane affairs with all the action in the tip. It should have a smooth acceleration or action from the butt joint clear through to the tip. The fisherman will find this type of rod very acceptable for either surface lures or with wet flies or fly and spinner combination.

If for trout fishing, the rod should be from 7½ feet to 9 feet with the 8½ foot rod being the most popular. These rods should be from 3½ ounces to 5 ounces. Many trout fishermen use their bass rods for trout which is suitable to them and will in no way injure the rod. On the other hand the light trout rod should not be used very extensively for bass fishing due to the weight of the rod as compared to the heavier fish which will sometimes be a terrific strain on the trout rod.

The line is one of the most essential parts of the equipment and should be selected with care. A cheap line may serve the purpose for a short time while one costing a little more will last for a long time, if properly taken care of.

A light line should never be used for fly fishing as the line is the thing which is cast and not the lure. The lures are usually so light that there has to be something to supply the carrying power after the rod has been used to supply the power to propel the line either on the forward cast or on the back cast.

For bass fishing a line of size D, if level, and one of size HDH or HCH, if double tapered, is desirable. Either will cast very well and the level line is always cheaper. For trout fishing the rods are shorter and lighter and a lighter line may be put into use very successfully. One of size E or F, if level, and if double tapered, HEH or HDH.

The leaders are a question of individual taste as to length, the standard lengths for trout being 7½ feet for dry fly fishing and shorter length for wet fly fishing. The extremely long leaders should be avoided by the beginner due to the difficulty in properly handling them. For bass fishing a leader from 4 to 6 feet is sufficient, although one longer may be used.

The reel may be one of single action or an automatic. And it is not necessary to buy one that is expensive as it plays practically no part in fly casting. It is used only as a storage place for the line.

The lures are many and of many different designs. For trout, there is the dry fly and the wet fly and the nymph which is used under the surface of the water in the early part of the season. Later in the season, the dry fly is mostly used.

There are so many creations for the fly fisherman to use for bass that space will not permit to name or describe them. There is the popular surface lure. The wet fly, either alone or attached to the small spinner of the desired size and shape, and many other sunken lures. There are so many that the novice becomes confused before attempting to purchase his bass lures. In view of this, let me suggest that only a few be purchased, which will, no doubt, bring the desired results.

If fishing dry flies for trout or bass, the line should by all means be greased to insure keeping it afloat. This makes it so much easier to handle when ready for the pickup and backcast which is accomplished in one motion. For trout fishing, the leader should not be greased, although some desire it so. For bass fishing, it should be greased due to the heavier and bulkier type of lures which are more difficult to pick from the water's surface.

This brings us to the starting point of the fundamental principles of fly fishing or casting. Like most everything else, there is a right and wrong method to successfully use anything. The greatest secret in successfully casting a fly is a matter of timing and once this is mastered the entire proceeding will become almost a matter of reflex action.

The position of the rod should be in a line with the body, or a perpendicular position, for most casting. This is true on larger waters. On smaller waters where brush and trees interfere with the overhead cast, the lure may be cast from a horizontal position of the rod whether a straight cast or a backhand cast. In either case, the same proper timing must be used.

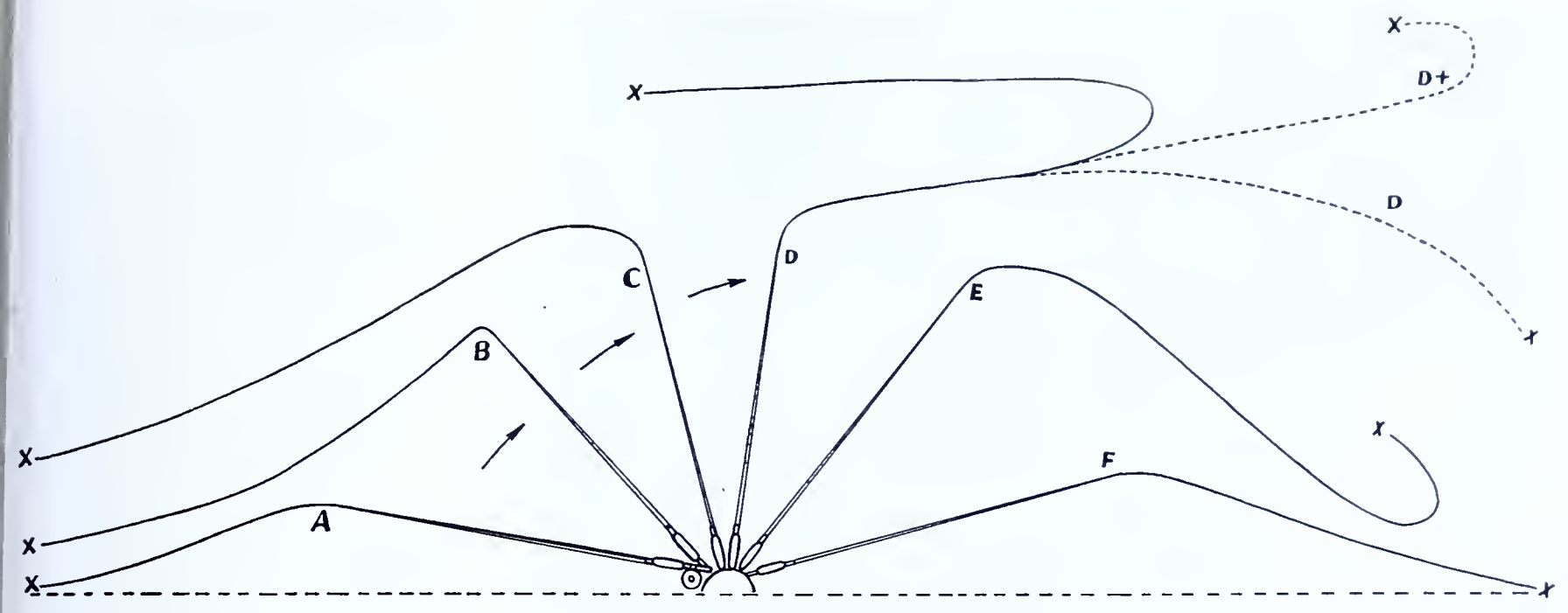
The position of the rod at all times is one of the most essential requirements which insures the line being kept on the proper plane on both the forward and backcast. On the backcast the line MUST be kept at a higher plane and when it returns on the forward cast it just naturally follows through to the desired objective on the water. Never aim for the point of objective on the water on the forward cast. If this is practiced, the result will be the line hitting the water ahead of the leader and lure. Always aim for an imaginary position about two feet over the water. This allows the leader and lure to leap forward as the heavy line reaches its destination and the result will be a graceful or natural descent to the water surface without any splash. This is very important in trout fishing. For bass, it is also best but a slight splash will not disturb or scare the wily bass so much as it will the timid trout.

The place where timing is so important is during the entire procedure between the pickup and the forward cast. Improper timing is the reason that so many fishermen manage to get the line and leader wrapped about their necks. The accompanying diagrams should help to correct this fault as it shows the right and wrong position of both the rod and line.

Diagram 1 shows both the right and wrong positions but to avoid confusion of too much line entanglement in Diagram 1, Diagrams 2 and 3 are supplemented.

Diagram 1 (a) shows the completed forward cast with the rod in position after the line, leader and lure have reached the water. If a sunken or wet lure is being used, sufficient time should be allowed for the lure to sink and the rod should remain in its position. If dry fly or surface lure is being used, the rod also may remain momentarily in its position. In either case, however, the rod should at the proper time be raised to position (b) where it should remain while the line and lure are being retrieved; and where it is in position to hook the fish in case of a strike. With the rod in this position the lure should be retrieved with the assistance of the left hand which holds the line in a coil until released at the proper time on the forward cast. Never allow this coil of line to follow the backcast.

When the pickup and backcast is ready to start, the rod should be slowly started on its backward course to position (c). The raising of the rod will place sufficient tension in the line so that it will be easily picked from the water's surface. The left hand which is holding the coil of line is of great assistance in helping to put tension in the line for the pickup and backcast. As the rod starts from position (b) to position (c) the operation is not at any time stopped, but is a continuous backward movement of the rod and when the rod reaches position (c) there should be a brisk snap of the rod still in a backward direction. This is known as the power stroke and should be strong and brisk enough to propel the line on its backward flight known as the backcast. The pickup and backcast



(A) Completed cast. (B) Fishing position. (C) Pickup. (D) End of pickup and backcast and pause. (D+) End of backcast. (E) Improper position. (F) Extremely improper.

(A) Normal position of rod after line and lure have hit water.

(B) Position of rod for retrieving line and lure. Rod should remain in position until ready for pickup and backcast. Line is held in left hand.

(C) Pickup and backcast are one completed motion with the power stroke completed just before rod reaches position D—.

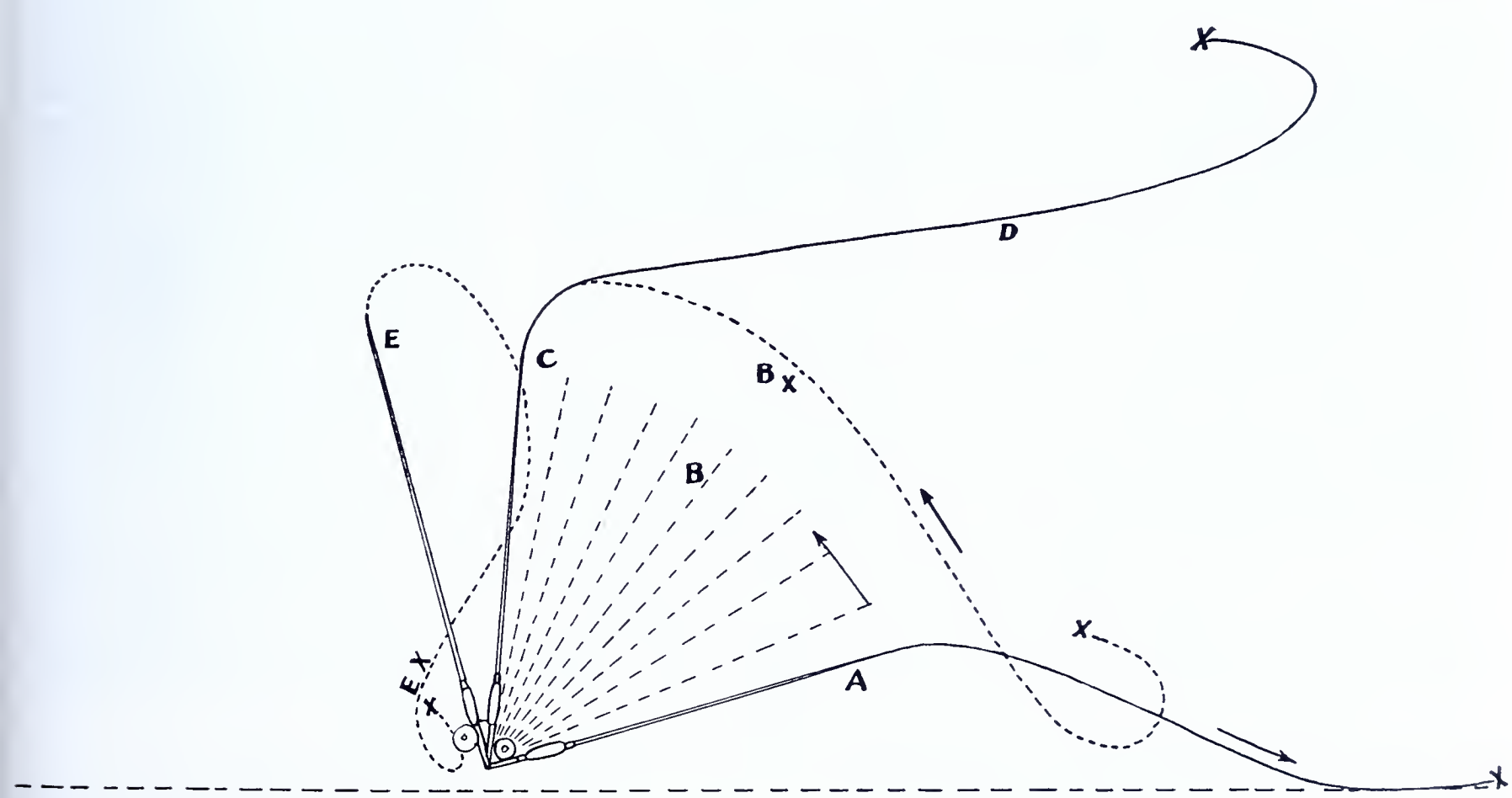
(D) End of backcast after pickup with rod remaining in position for pause until backward flight of line is completed.

(D+) Backward flight of line completed and forward cast must be started at once with power stroke starting from position (D) and completed just before reaching position (C) where the rod should be allowed to follow through to position (A).

(D—) Indicates descending line, by allowing too much time for pause.

(E) Rod too far back which will allow the line and lure to hit the water and seriously interfere with forward cast.

(F) With rod in this position both line and lure are bound to hit the water on the backcast resulting in no cast or the line wrapped about the fisherman's neck.



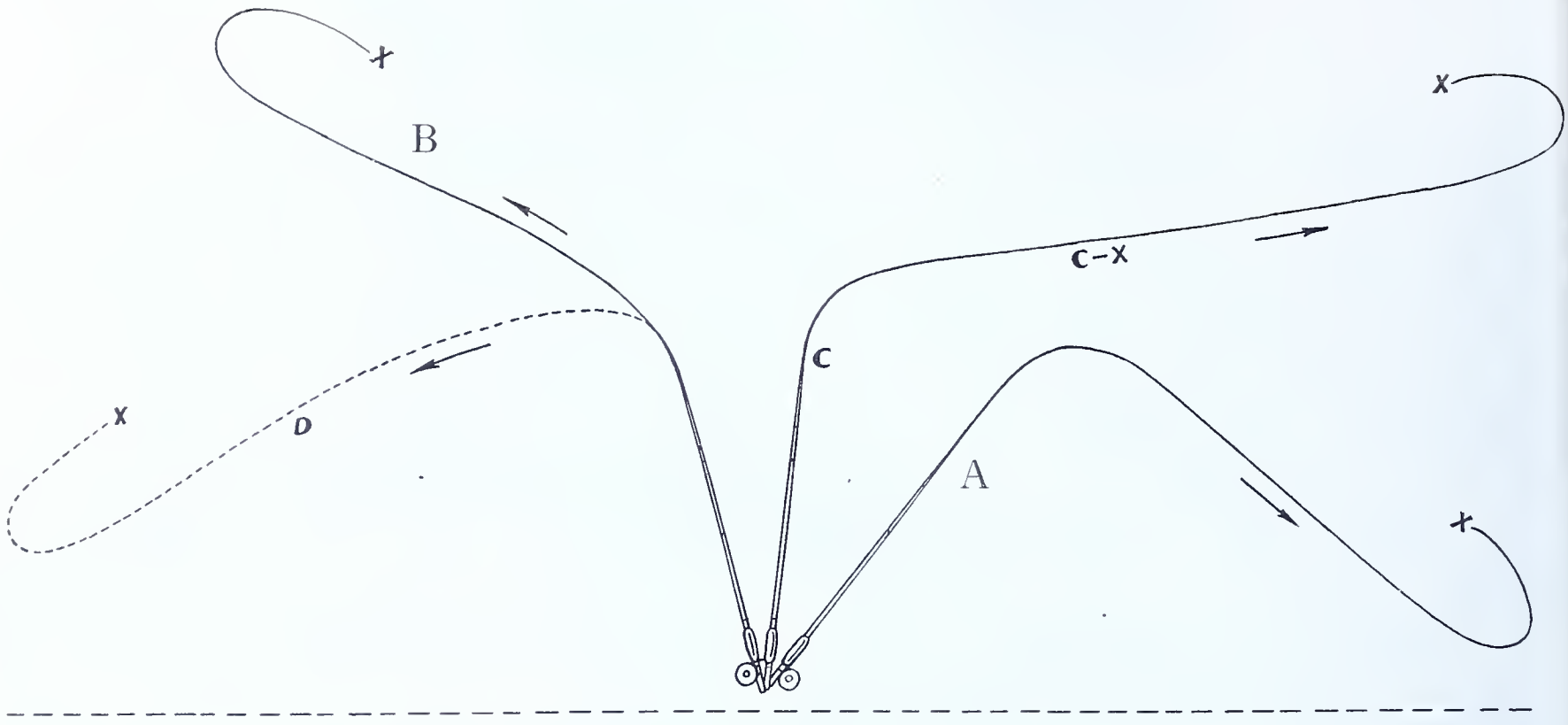
C Proper rod position D Proper line position.

A. Extremely improper position with line and lure to the rear following backcast.

B. Indicates rod in motion on forward cast from position A to position E.

B+ Indicates course of line on its flight into fisherman's back.

E. Indicates rod as forward cast nears its end with the line and lure wrapped about the fisherman as indicated by E+.



A. Improper position of rod with line and lure about to hit water on backcast just before forward cast.

B. Forward cast allows line and lure to reach a high plane resulting in both falling to water with a splash or just in front of caster.

C and C+ Proper position with line on proper plane which allows forward cast to be properly made with line and lure properly falling as indicated by D.

should be one smooth motion with the rod abruptly stopping or pausing at position (d) known as the pause position while the line completes its backward flight. The rod must remain at position (d) and time enough allowed for the line to reach its limit of backward flight and, as soon as it does so, the forward cast MUST start at once, with the power stroke starting from position (d) back to position (c) where the rod should remain momentarily for the line to start past on its forward flight. The rod should then follow through to position (a) with the line that has been held in the left hand being released just before the rod reaches position (a). This will allow the line to flow freely through the guides and is only put into use when long casts are desired. If only short casts are being made, there will be a very small coil of line in the left hand and the line that is extending from the tip of the rod will flow through the air to its proper objective without shooting it through the guides.

If greater distance is required, more line should be stripped from the reel with the left hand while false casts are being made but never allow this line to any extent to flow out with the backcast. It should be extended on the forward cast.

Too much stress can not be placed on the backcast and the pause which allows the line sufficient time to reach its backward limit of flight. The longer the cast is, there must be sufficient time allowed for the extra line used. Position (d) shows the rod in its proper position and the line in a loop on its backward flight while (d) shows the line nearing its backward limit of flight. It is at this point that the forward cast MUST start. If too much of a pause is allowed, the line will at once start descending and when the forward cast then starts the line will be on an improper plane and as it is brought forward will, no doubt, hit the fisherman in the back. (d-) indicates the descending line by too long a pause. The more time there is allowed on the pause, the lower will the line drop to ruin a successful cast.

Under Diagram 2, position (a) indicates improper position of the rod and shows the line on its backward flight on an improper plane. With the rod in this position, the line is bound to hit the water on the backcast just the same as if improper timing were used with the rod remaining in its proper position. Thus the line and lure starting from a low plane, on the forward cast, will be propelled forward to an elevation above and ahead of the fisherman provided it gets by his head or ears. If he gets the line and lure past his body, to its certain course and improper plane ahead the result will be the line and lure either dropping to the water with a splash or dropping in front of the fisherman. There is also the possibility of hanging the lure in a tree ahead of and over the fisherman's head. Position (b) shows the end of the power stroke on the forward cast and the line on its upward flight to the improper plane, as just explained. Position (c) is the correct position and shows the line on its backward flight and proper plane while position (b) shows the rod at its proper position at the end of the power stroke forward just before it should follow through to the horizontal position over the water. (d) indicates line on proper plane forward.

There seems to be a general trend among the starting fly fishermen of allowing the rod on the backcast to go to an extreme position as indicated in Diagram 1 (f) and to show what actually happens when this is put into practice, Diagram 3 is supplemented.

Rods are manufactured in such a way that the power for casting lies in the rod and not the use of a sweeping motion of the full arm. The power stroke of the rod, whether on the forward or backcast, covers a very short arc and it is absolutely unnecessary to increase the width of this arc. Diagram 3 position (a) shows the rod at this extreme position. This practice can result in nothing but a poor or no cast at all and in the majority of cases with the line wrapped about the fisherman's neck, body or rod. With the rod and line in this position, it will be subjected to unnecessary strain and resistance which will seriously interfere with propelling the line forward and as the rod moves on in the arc of the forward cast as indicated by (b) to position (c) the chances are that the line will be inclined to creep toward the fisherman's back as indicated by (b), or the cast entirely ruined.

Position (c) indicates the rod at the end of the power stroke forward and as the rod follows through to its proper position the line will be tangled about the fisherman's body as indicated by (e-) showing the line.

The weight or wind resistance of the lures will make some difference in the

(Please turn to page 18)

GOVERNOR EARLE SCORES ON TROUT

Accompanied by Colonel A. L. Janeway, Deputy Adjutant General, Governor George H. Earle recently enjoyed splendid trout fishing in the Poconos. The Governor scored with a fine catch of brook trout, several of which topped 14 inches. Colonel Janeway landed a magnificent rainbow trout weighing 2 pounds.

Incidentally, there's quite a rainbow trout contest being waged by Colonel Janeway, J. Hansell French, Secretary of Agriculture, and Grover C. Ladner, Deputy Attorney General and President of the State Federation of Sportsmen's Clubs. It's nip-and-tuck, Mr. French having landed a rainbow weighing over three pounds and Mr. Ladner another rainbow over the three-pound mark.

ANNOUNCING A CONTEST FOR FLY FISHERMEN

Through the interest of Bernard A. Heider of Scranton in fly-fishing for bass, the ANGLER this year is staging a fishing contest in which all fishermen who enjoy taking the scrapping smallmouth bass or largemouth bass on dry flies or floating surface lures may participate. The contest will cover two months, July and August, and the largest bass to be entered during each month will be awarded three fine flies, including a hair mouse, cork body lure and deer hair fly tied by Mr. Heider. The July section of the contest will close at midnight July 31, and the August section at midnight August 31. There is also a ladies' division in the contest. One dozen of these popular bass lures will be given, six in July and six in August.

The ANGLER is relying on the sportsmanship of our fishermen in observing certain rules relative to this contest. To enter a fish, smallmouth or largemouth bass, it will be necessary to submit a clear photograph of the catch. An article of about 100 words should accompany the photo. As to weight, length and girth of each fish, two witnesses to the weighing in should append their names to the report. And remember—any fish to qualify must be taken on a dry fly, which, of course, includes the bass bugs.

Judges in the contest will be Governor George H. Earle, Commissioner of Fisheries O. M. Deibler and the Editor.

Following are the rules:

1 Contest open to all Pennsylvania fishermen.

2. Bass must be caught in inland Pennsylvania waters.

3. Three (3) Flies for largest bass for July taken by men. (Same for August).
Three (3) Flies for largest bass for July taken by women. (Same for August).

4. Bass must be caught on dry fly.

5. Photo of catch and approximately 100 words about it must be submitted.

6. Contest to close at midnight July 31 and midnight August 31 respectively.

7. All photos to be retained by ANGLER for future publication (These pictures will be returned if requested after cuts have been made).

GOVERNOR GEORGE H. EARLE
One of the most skillful bass fishermen in Pennsylvania, who will be a judge in the ANGLER'S Bass Fishing Contest this year.

FISH CONSERVATION NEEDS THE FISHERMAN

By MILTON L. PEEK,
Member, Board of Fish Commissioners

PENNSYLVANIA today is recognized as one of the leaders in conservation of game and fish. Not only is the Pennsylvania Game System known the world over as a model, but our fishermen, through their license fund, have made possible a chain of ten splendid hatcheries which last year produced over 600,000,000 fish of the various species. These hatcheries stand as a monument to the unselfish devotion of Pennsylvania anglers to the cause of better fishing. Many of us may not fully realize just how vital this program of fish distribution has been to the future of our sport, particularly during the past five years. To do this, we must consider certain handicaps that have been imposed on our waters.

When, in 1930, the drought struck our trout and warm water streams, heavy loss of aquatic life resulted. Trout streams formerly regarded as good water shrank to mere rivulets, some drying up entirely. Loss of trout in such waters, heavy though it was, did not affect their future potentiality as fishing areas so drastically as did the destruction of the food supply upon which all successful stocking must be based. Warm water streams, although they, too, became very low, offered some compensation to species of fishes living in them through increased production of aquatic vegetation and consequently more food and cover. Natural enemies of fish, the watersnake, for example, exacted increasingly heavy toll on all forms of fish life in Pennsylvania. Only by intensive stocking of trout above legal six-inch size in waters approved after a stream survey, and only by heavy planting of warm water species from the hatcheries was it possible to afford our Pennsylvania anglers fair fishing during the drought years.

The limitation placed on our fishing waters in highly industrialized Pennsylvania by pollution is too well known to most of our fishermen to require lengthy discussion. With 85 per cent of our waters affected in varying degrees by pollution, the remaining 15 per cent have been forced to bear the brunt of virtually all fishing. Here again the hatcheries have aided in preserving the supply of fish under intensive fishing.

Fish conservation, not only in Pennsylvania but in every section of the United States today, however, must be based first, last and always on the individual fisherman, on his attitude of good sportsmanship and interest in conservation. He is the foundation of all constructive conservation in the outdoor field, and his support is vital for the future of the angling sport.

I am convinced that here in Pennsylvania we are fortunate, primarily, in having the backing of one of the finest groups of sportsmen in the world. We cannot fail to forge rapidly toward our goal of better fishing with their support. Conservation-minded, they constitute the front-line in the drive for good future fishing.

General Hints On Fly Fishing

By CHAS. M. WETZEL

LINES and leaders that are tapered are not absolutely necessary for dry fly casting, yet they help materially in causing the fly to fall lightly on the water. Tapered leaders are rather expensive, but it is not alone a matter of economy that causes many anglers to tie their own—rather it is the satisfaction derived in knowing that the leader has been correctly proportioned to the size of line.

Let us as an illustration tie a leader. We will assume that the line we intend using it on is an HCH or in other words, a line having a diameter of .05 of an inch at the center and .029 inches at the ends, both measurements being approximate. The diameter of the butt or heavy end of the tapered leader should be about sixty-five one hundredths (.65) of the tip end diameter of the line, which for our HCH would be .65 x.029—.0188 inches, calling for gut known as Marana 1. The diameter of Marana 1, by the way, is approximately .019 inches.

The desired length of our leader will be about ten feet and tapered to a 3-x point. Besides the strand of Marana 1, we will require one strand each of the following: (Padron 1—.016 dia.); (Regular—.013 dia.); (Fina—.012 dia.); (Refina—.011 dia.); (1x—.009 dia.); (2x—.008 dia.); and (3x—.007 dia.). The last three, 1x, 2x, and 3x are known as diamond drawn gut or tippets, since they are drawn through a perfectly round hole in a diamond, which shaves off all irregularities and makes the gut of uniform diameter throughout. We will assume each of these three tippets to be eighteen inches long and the five gut strands approximating fifteen inches each. This will give a length (5x15)—(3x18)—129 inches, allowing nine inches over all for waste on our ten foot leader.

After the gut has been thoroughly soaked, it should be slightly dried before tying, so that the outer skin will not become "fuzzy" when the knots are pulled tight.

The leader knot illustrated in the sketch is the one generally used in connecting the strands of gut together and even though you may not tie your own leaders, a knowledge of this knot will prove helpful, especially when fastening on a tippet. The loop in the end of the leader I have described in a former issue of the ANGLER and deem it unnecessary to repeat it again here. It is the ordinary bowline knot.

One thing I would urge when tying up a leader is that particular attention should be given to the butt end in order that the diameter will not be too small. Sixty-five one hundredth (.65) of the end diameter of the line is an arbitrary figure which I have found gives good results. If a considerably lighter weight gut is used, the cast line, unrolling in a large loop, will be unable to transmit its energy to the leader with the result that it will fall on the water in a series of twisted coils.

There are various knots used in attaching the eyed dry fly to the leader. For a long time, I used nothing other than the simple "line to leader knot," illustrated in the sketch; but finally came a day when my faith in it was rudely shaken. Since then I have given an additional turn around the hook with the gut and have christened it the dry fly knot. I have shown it to a number of friends of mine who were struck with its simplicity and now use no other.

Two additional knots, Major Turle's, and the figure eight are also shown in the sketch. Of the two the latter is undoubtedly the most popular. In general, knots that fasten the eyed flies to the leader are hard to open and the usual procedure is to cut the fly off, replacing with a new tippet if you are fortunate enough to possess the leader for this length of time.

And now a word as to the diameter of the fine end of the leader. On a stream where large brown trout may possibly be encountered, 1x at the point is none too heavy. This is also applicable to fishing brushy streams where the hazards of getting fast are great; elsewhere 3-x may be used. During low clear water, I frequently use a leader tapered to a 5-x point, but frankly with gut of this size, the chances are all with the fish.

Since the basis of this article is more or less on balanced equipment, I cannot refrain from expressing my views on the relative weight of the reel to the rod. The following is my own theory and though it differs from others, yet it works well in practice and is based on sound engineering principles.

The reel should be large enough so that the rod will be in balance exactly at the grip.

When the point of equilibrium is at this place, no additional bending movements are set up in the rod and the tiring effect caused by all day casting is materially lessened. Let us look at it in another way. Suppose we grasp the rod by the tip end. Immediately the rod starts deflecting in a curve, because a bending movement is set up. This movement is the weight of the rod concentrated at its center of gravity times the distance to the support or the place we are holding it. In other words, we are putting a further strain on the rod by not holding it at its center of gravity. It feels heavier, too, holding it by the tip, yet we know that its weight has not been changed. Now suppose we start the regular motions we go through in casting. "Afraid to risk it, eh?" That is the principle only exaggerated, of course, that occurs when the reel is too small to balance the rod at the grip.

Judging from the number of large reels one sees nowadays, there can be no doubt that fishermen are waking up to the fact that their purpose is something more than a place for storing line, and in view of these facts, I confidently believe that it is only a matter of time until the manufacturers will discontinue making the small affairs that are a strain on both the rod and the arm. For the past five years I have been using a salmon reel on my trout fly rod and it is not too heavy.

With the outfit nicely balanced and proportioned, casting the dry fly should now become a pleasure. For those anglers who have never learned the secret of dropping a dry fly lightly on the water, the following information may prove helpful.

Let us assume that slightly upstream from where we are standing, a trout has just risen to a fly. The vagaries of the current are such that drag will not occur, therefore the ordinary overhead cast will be resorted to. Our object is to place the fly lightly on the water about three feet upstream from the feeding fish. Refer to the sketch which may help to visualize the conditions.

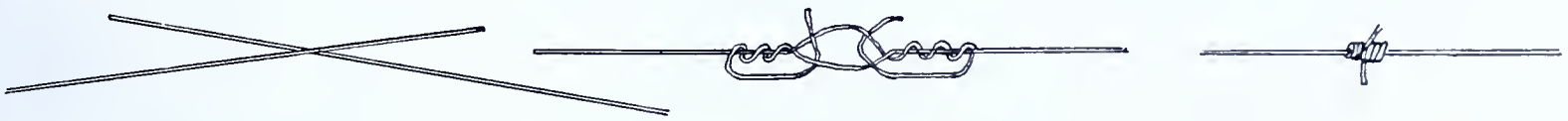
If we have just the required amount of line out to reach our objective (that is about three feet upstream from the fish) the fly will fall heavily and may sink. That is the problem we are trying to correct.

There are various ways of getting around the difficulty, the most common being that of "shooting the line."

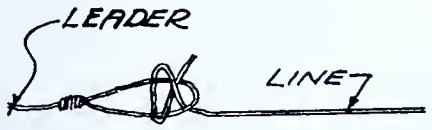
We will first locate an imaginary point of aim about three feet upstream and a like distance above our objective. Make a number of false casts in the air—both for the purpose of drying out the fly and to get out the required distance, which for our example, will be six feet short of where we desire the fly to alight. During this preliminary casting the same amount or six feet of line, should be collected and held in the left hand for shooting purposes. Now when the fly is extended to the full length of the free line, allow the coils of line held in the left hand to pass through the guides of the rod or in other words "shoot the line." The forward motion or momentum given to the free line will now be lost and will not carry down to the fly, which, robbed of its energy, remains suspended for an instant above the water, then flutters down thereon as lightly as a snowflake.

TRY CANDY FOR CATFISH

If catfish refuse to be tempted by the accepted lures including worms and cut bait, try them on candy as a sure killer, according to George Zimmerman, Secretary of the Lehigh County Fish and Game Protective Association. Take the word of Sam Smith of Rextown, Lehigh County, for this. Sam was fishing for catties in an old slate quarry near his home and after trying about everything that he, as an old fisherman, could think of, he baited his hook with a piece of sticky caramel that he had been chewing. The response was almost instantaneous and in a very little time he had hooked a twelve-inch catfish, following his success with half a dozen others of nearly the same size. But perhaps catfish in this particular hole are more epicurean in their tastes than at other places. Sam does not profess to know. But that's his story and it's true—so help me, writes George.



THE LEADER KNOT



LINE TO LEADER KNOT

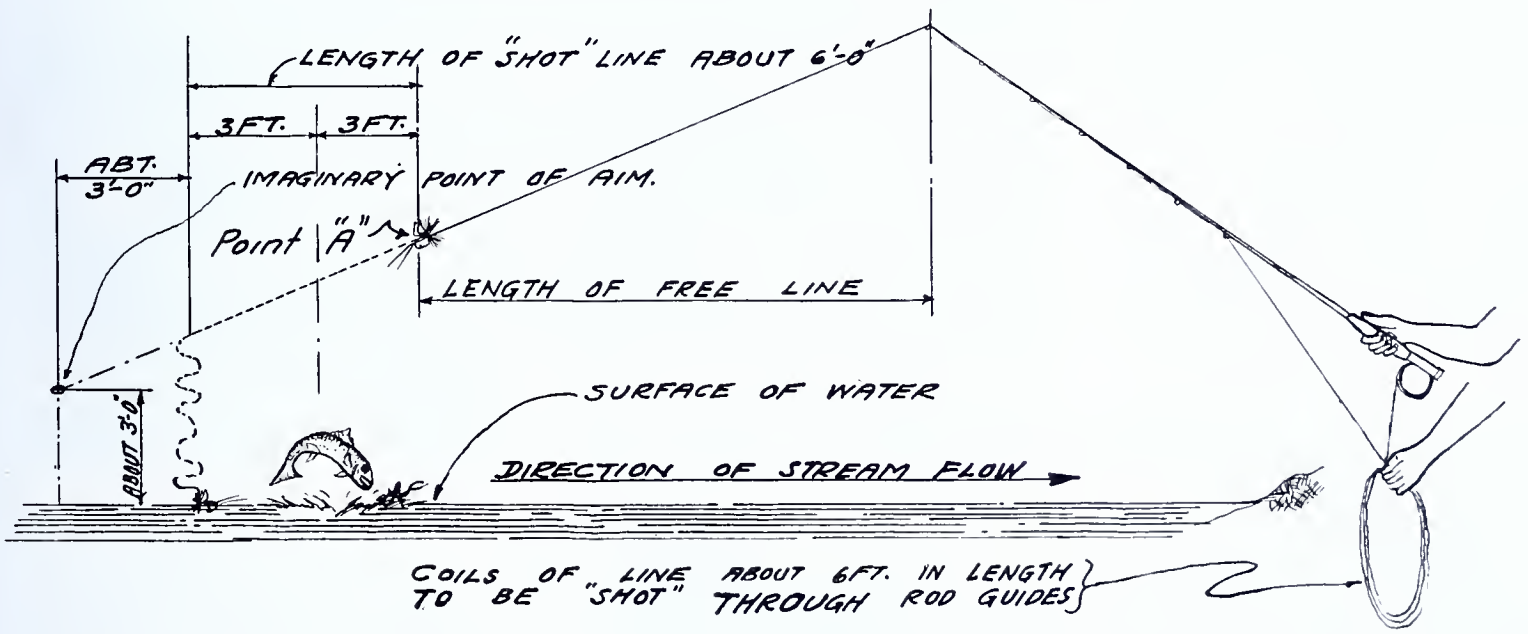
WET FLY TO LEADER KNOT

DRY FLY KNOT

MAJOR TURLE KNOT

FIGURE 8 KNOT

DRY FLY TO LEADER KNOTS



WHEN FLY IS EXTENDED TO FULL LENGTH OF FREE LINE OR POINT "A" - SHOOT COILS OF LINE HELD IN LEFT HAND WHICH WILL CAUSE FLY TO FLUTTER DOWN LIGHTLY ON THE WATER.

Wetzel-4-36

Pennsylvania Bass

Will the Bass Cycle Continue Upward This Year?

By Alex P. Sweigart

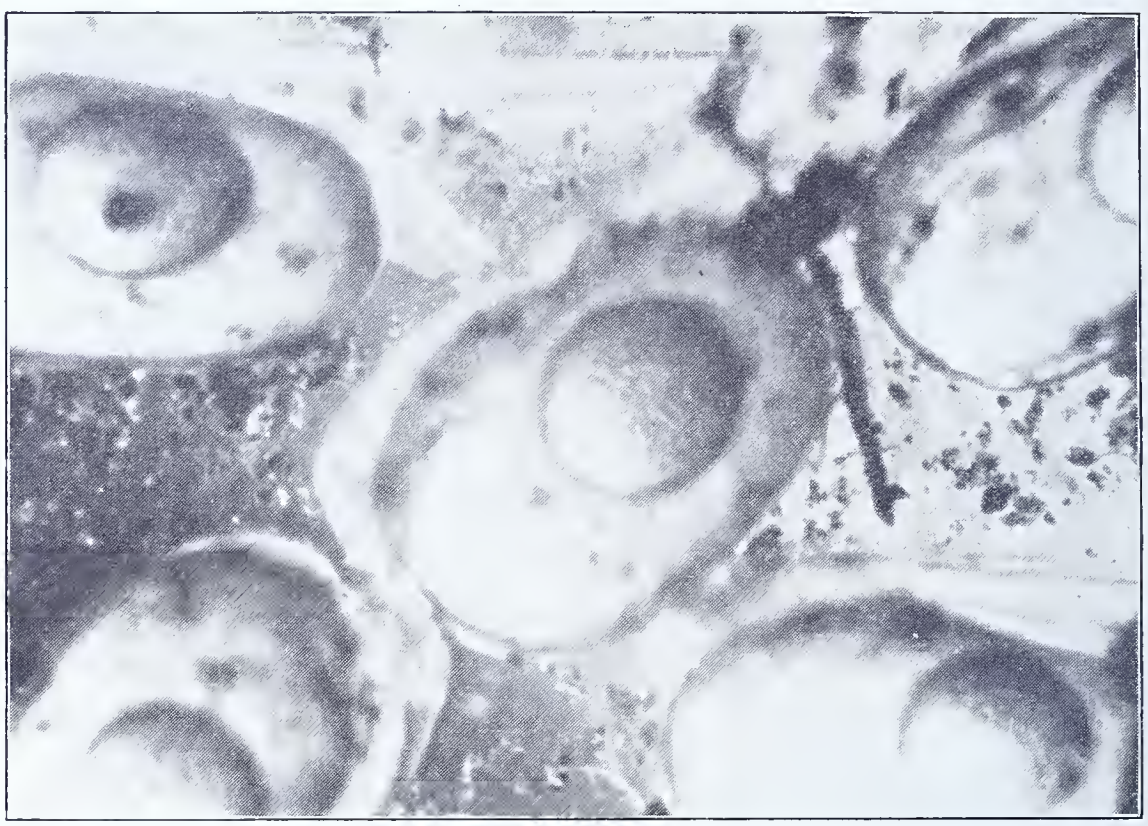
IF THERE is one characteristic outstanding in the smallmouth bass, Micropterus Dolomieu, and its cousin, the largemouth bass, Micropterus Salmoides, it is a driving, relentless lust to kill. Each year in Pennsylvania waters, these two species of game fishes exact heavy toll not only from forage and food fishes in their range but from their own kind. They are, by this same token of voracity and destructiveness, peerless sporting fish.

An incident that occurred some time ago, at Pleasant Mount hatchery in Wayne County, typifies the reign of terror that bass, when present in a body of water in large numbers, maintain. C. R. Buller, chief fish culturist of the Fish Commission, and the writer were standing on the shore of the four-acre brood pond where adult bass of both species were being held. A few yards away, in a shallow cove that dropped abruptly into deeper water, over three hundred large golden shiners were milling about. Our presence on the shore line failed to frighten the forage fish from their haven of safety.

"It's pitiful," my companion said. One glance at the shiners confirmed his remark. Of that school of minnows, few, if any, were unscarred by the crushing jaws of the bass. Restlessly they moved about in their tiny cove, instinctively seeming to keep away from the brink where experience had taught them lurked death. Apparently they preferred starvation to the fate which waited with the cruising bass beyond the shelf.

While concentrations of large bass similar to that described do not occur in wild waters, it is most essential to the welfare of these great game fish, when numerous in stream or lake, that an abundance of live forage—minnows, stone catfish, crayfish, helgramites, and even the young of the sucker, sunfish or yellow perch—is present. Fortunately, the Fish Commission has developed a strain of bass for hatchery purposes that feeds readily on artificial food, hence the forage problem at the fish farms has been solved in large part.

From the angle of forage, Pennsylvania bass streams and lakes are fortunate. The famous North Branch of the Susquehanna teems with minnows, stone catfish, crayfish, helgramites and the young of other species that furnish food. The Upper Delaware likewise affords an abundance of bass food, while in the central counties, the Juniata River and its Raystown Branch, the Conodoguinet Creek and Tuscarora Creek provide ample forage. In northeastern Pennsylvania lakes and ponds, Lake Wallenpaupack, for instance, to which the bass has been introduced, the young of the yellow perch, in addition to the golden shiners, are vital to its welfare. The Upper Allegheny, which has been furnishing excellent bass fishing in recent years, also is a good forage producer.



Smallmouth Bass, one day old, showing yolk sac.

Concerning Bass Cycles

In virtually all waters of Pennsylvania, particularly the section east of the Allegheny Mountains, both smallmouth and largemouth bass are of comparatively recent introduction. Old records available at the Board of Fish Commissioners indicate that the first stocking of smallmouth bass occurred in 1863, during the Civil War. Their increase in number, apparently touching a peak during the late 'eighties and 'nineties, is rivalled in Pennsylvania game fish annals only by the remarkable invasion by the pike-perch or wall-eyed pike of the Susquehanna River and its tributaries during the nineteenth century.

The increase and decrease in number of smallmouth bass during the latter part of the nineteenth century, reports available indicate, formed an interesting cycle. In considering this fact, however, we must take into consideration comparatively light fishing during the period. Roughly, from seven years to ten years is believed to have comprised the average period of the upward swing in bass population. Invariably, too, it was noted that when the bass became too numerous, a corresponding decrease in forage fishes and other species occurred. The downward trend of the cycle apparently covered about five to seven years, during which time these voracious game fish, deprived of their normal food supply, turned upon their own kind. With replenishment of the forage, the cycle again turned upward.

Apparently, the peak of one of these cycles occurred in the Upper Delaware about 1892. Commenting on the amazing increase in number of smallmouth bass, Weightman Stelwagon, who is responsible for the Stelwagon Bass Chart, had this to say:

"My attention was first called to the comparatively slow growth of bass in 1892. In August of that year your president (of the Fish Commission), Hon. Henry C. Ford, with whom I have spent many seasons in Pike County, and myself were greatly annoyed by the large number of bass weighing from two to four and one-half ounces that we caught, six and one-half to eight-inch fish. In talking the matter over it was recalled that during the preceding summer we had remarked the amazing number of tiny bass in the river. They were in decidedly larger numbers than Mr. Ford had ever seen and he had been fishing the Upper Delaware since 1878. At almost any point along the shore five to ten of the black tailed fish would be in view at one time."

Just how radically the introduction of black bass may affect the fish population of a smaller body of water is illustrated by the following interesting excerpt from the report of the State Commissioners of Fisheries for 1896. It also tends to substantiate the theory that more intensive fishing may, in the long run, benefit the supply of bass.

"In the case of Lake Laura, (Pike County), many years ago the pond was alive with yellow perch, shiners and crawfish. Then black bass were introduced. A few years after the property came into the possession of the Blooming Grove Park Association, which organization closed it to public fishing. As the lake was remote from the club house it was not fished to a great extent, and as a result the black bass increased with great rapidity. These preyed with such assiduity on the bait in the lake

that not even their fecundity saved them. Consequently at the present time there are very few yellow perch, sunfish, shiners or crawfish in that body of water."

In more recent years, the statistics compiled on bass catches by Harry Shawkey, of Warren, one of the most expert fishermen in the state, serve as a valuable index to the increase of these game fish on the Upper Allegheny watershed. Shawkey not only is an expert fisherman, with intimate knowledge of the water he fishes, but a conservationist as well. While his average kill of bass taken from 1916 to 1935 inclusive, was 17 bass a year, the chart he has carefully maintained as to total number of bass caught assumes exceptional value in checking cycles of these fish in recent years. Let us examine this chart more closely, bearing in mind that he fished virtually the same stretches of water over 20 years; that he made a close study of the habits of the Allegheny bass and more successful lures in taking them, and finally, that his knowledge of weather and water conditions placed him on the stream very often at advantageous times.

Referring to the chart, we shall divide it into three sections, 1916 through 1922, 1923 to 1930, and 1930 through 1935. In 1916, his catch was 358 bass. In the third year of this period, 1918, the season catch had dropped to 68 bass. From 1918, there was a gradual rise in the season catch to 1922, when 505 bass were caught. The first year of the second period, 1923, marked another drop in the year's catch to 243 bass, and, as in the first period, the low point of 68 for this period was reached in 1925, the third year. By 1930, when 510 bass were caught, the cycle was apparently again pointed upward, and until last year, based on Shawkey's records, the upswing was exceedingly rapid. It is interesting to note that the first two periods each covered seven years.

In considering the rapid increase in number of bass in Pennsylvania waters during the past five years, several factors should be stressed. The Fish Commission, through increased stocking, not only supplemented the supply in wild waters but introduced strange stock which should have benefited the strain generally. Drought conditions struck a hard blow at stream levels in 1930 and resulted in the growth of much vegetation in streams and lakes. Not only did this vegetation serve to increase the existing food supply but it insured more available cover for the young bass.

Perhaps the most favorable factor to bass increase, however, related to spawning. From 1930 to the present time, late May and early June (when spawning of both the smallmouth bass and the largemouth bass usually takes place in our waters) found the streams fairly low and clear and water temperatures well above 60 degrees Fahrenheit, conditions ideal for preparing of the bass nests, spawning of the adhesive eggs by the female fish and subsequent guarding of the nests by the males. A vast supply of tiny aquatic organisms such as the cyclops swarmed in the bass areas when the young fish were ready to feed, and later larger forage in the form of young minnows and other species was available. It should perhaps be mentioned that at spawning time a sudden drop in bass stream or lake

Largemouth Bass

temperature will result in not only delaying the spawning but in extreme instances of prolonged low temperatures cause the female fish to become egg-bound. If, while the male fish is guarding the nest, high and muddy water with its accompanying silt occurs, the parent is frequently discouraged and may leave the nest to its fate, particularly if this condition prevails over a long period of time. Fortunately for our bass, nature has been kind during the past five years.

A vast increase in number of bass fishermen has occurred in Pennsylvania during the last twenty years. It is reasonable to assume that our fishermen have been taking, each year, an increasing number of these game fishes from our waters, with a result that the possibility of over-population by bass has been thrust aside for the time being. Intensive fishing may, in the future, prove a boon to our bass in that it will serve as a balancing factor to over-production. Bass from 9 inches, the legal size, to 14 or 15 inches, comprise many catches and at this stage of growth they are voracious feeders to the -nth degree. So long as a good supply of brood stock in stream or lake is available, and there is sufficient forage, the bass should continue to hold its own. Incidentally, greater use of artificial lures for bass should benefit the supply of forage available in bass areas.

There is one "if" to the present bass situation—the unprecedented floods which swept the bass ranges this spring. Warden C. V. Long reported recently that he had had many reports from persons living along the Juniata River to the effect that more bass had been observed this spring than ever before. Of course, just as many bass were present last summer and autumn, but a great deal more cover in the form of weed beds was available in which the fish found concealment. That the rushing flood waters may have swept away much cover in our bass streams, that riffles and shallows may have been damaged to some extent as food producers is possible. It all comes back to the same story—for more bass we need more live forage, and full effects of the flood may not be apparent for another year or longer.

But given a good spawning period again this year and fairly low water levels conducive to the growth of aquatic vegetation, the prospect for continued excellent bass fishing in Pennsylvania warm water streams and lakes is encouraging. At least we know that many tackle-straining smallmouth bass and largemouth bass still cruise the forage ranges of stream and lake.

The Juniata River, One of Pennsylvania's Major Bass Waters Affected by Flood.

Fishes of Pennsylvania

By C. R. BULLER

Part Two
HOW FISH LIVE

FOR convenience, fish are classed under three heads, game fish, food fish, and forage fish.

Fish differ much in energy, courage, and resistance to attack. Those which possess all three attributes in a marked degree and are a fair size when fully grown, are termed game fish. They are prized and much sought after by the angler for the fight or struggle they afford when hooked. The brook trout, brown trout, black bass, yellow perch, and pike perch are the most important game fishes of Pennsylvania.

When angling for game fish, much wholesome recreative sport is afforded the fisherman; but fish not possessing qualities of gameness in so marked a degree are also sought because from the time of primitive man, fish have been one of his staple foods.

Fish sought more for their edible qualities than for their gameness, are known as food fish. In the inland waters of this state, it is unlawful to catch food fish other than with rod, hook, and line, but even by this means the number of pounds taken and consumed each year is enormous. Those of our inland food fish most sought after are the catfish, the sucker, the carp, and the eel.

The forage fish are also very important inhabitants of our inland waters. These fish, which rarely exceed six inches in length, usually belong to the minnow family and are commonly called bait fish. There are many varieties and they are adapted to living under all the conditions in which food fish and game fish exist. This is so that they may be used as food for the more desirable species, which eliminates to a certain extent the tendency of the more valuable fish to prey upon one another.

The inland waters of Pennsylvania consist of the cool mountain and meadow streams, the home of brook trout, brown trout, rainbow trout and of a number of kinds of minnows; the larger slow moving streams or rivers, the home of black bass, pike perch, suckers, bullheads, and a few other kinds of food fish and game fish, together with various kinds of minnows, and our natural lakes and our artificial ponds, the home of pickerel, lake trout, yellow perch, sunfish, bullheads, and minnows.

There can be no distinct line drawn between the fish of the rivers and those of the lakes, as fish that prefer the rivers, like the bass and the pike perch, are found in some of our lakes and our ponds. But where the ponds or the lakes are small and inhabited by such voracious fish as the bass and the pike, the fishing is meager. Because of their feeding habits, fish of this character require a large range.

Fish, such as yellow perch and bullheads, that prefer the ponds or the lakes, are also found thriving in our rivers. These pond fish, so to speak, living in the rivers, seek the eddies and the quiet waters where conditions are similar to those in the lakes or the ponds.

The chief food of our most important fish, from the angler's point of view, is other fish, and apparently nature intended a number of different kinds of fish to live together in the same body of water, regardless of the toll taken on the smaller ones by the larger individuals. In order that the smaller and less voracious varieties be given a chance, their habits are such that when fully grown the different kinds select different portions of the pond or the body of water they are in for a feeding ground. This different range or feeding ground has a tendency to keep the adult of the larger and more voracious species seeking their food in a different portion of the pond than that used by the adult of the smaller species.

The fish of a small lake or pond can be roughly divided into shore feeders, bottom feeders, nocturnal or night feeders, those feeding in comparatively deep water, and those feeding in extremely deep water.

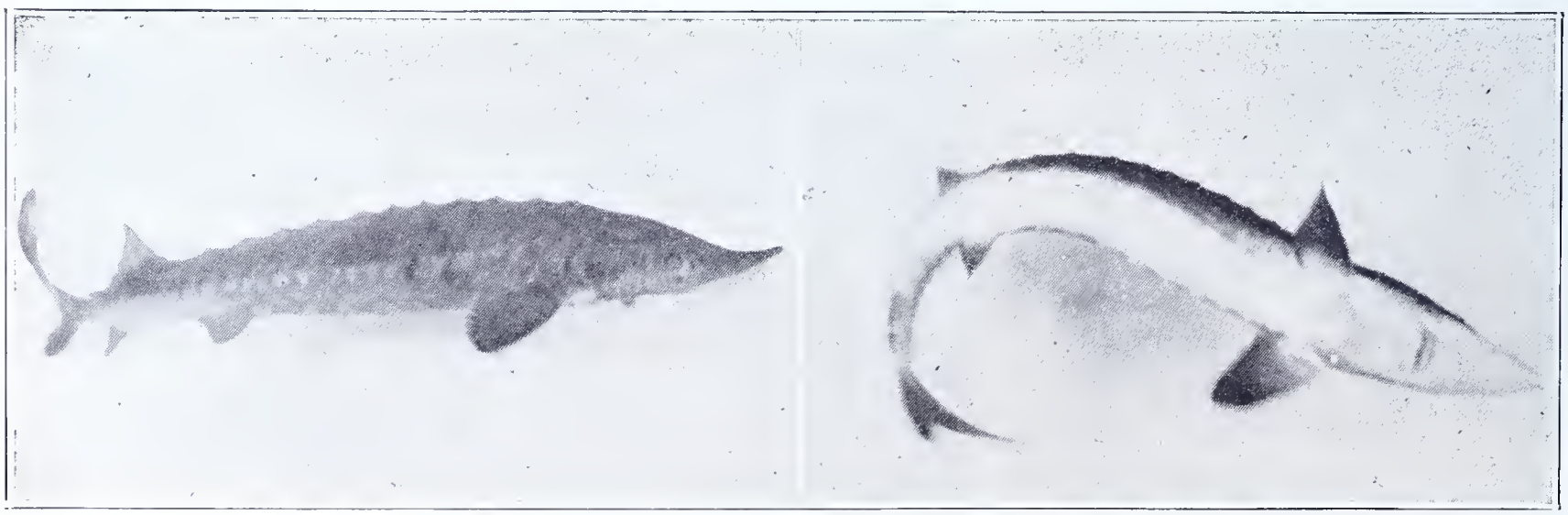
Of the fish commonly found in our small inland lakes, the sunfish, a shore feeder, takes food both from the top and the bottom of the pond. The pickerel, a true shore feeder, eats other fish chiefly, and its feeding ground is along the shore line among the aquatic plants, which is the feeding place for many of the smaller fish of the lake. The sucker is a good representative of the bottom feeding variety. In an earlier issue, we spoke of the forms of fish in relation to their feeding habits. By examining the mouth of the sucker with regard to its form and position, one can readily see that nature intended that he should seek his food on the bottom.

The bullhead is a representative of the nocturnal or night feeders, and a feeder in the roily waters where little light penetrates. The lake trout is a feeder of the very deep, cold portions of the body of water he inhabits, and he subsists chiefly upon smaller, more unfortunate fish that by chance enter his range. The yellow perch is a feeder midway between the very deep water feeders, like the lake trout, and the shore feeders, like the pickerel.

I have mentioned that the chief food of our principal adult fish is other fish, but no definite statement as to what constitutes the food of the many varieties found in our waters can be made. The food depends largely upon local conditions, as for example, the yellow perch will live mostly on insect and other small life, such as blood worms, and fresh water shrimp, where these abound. but when conditions are not favorable to insect growth, the yellow perch feed on other fish.

The age of the fish has a great deal to do with what constitutes its food. Roughly, the feeding stages of fish can be divided into three periods. first, the sac feeding stage. second, the plankton feeding stage; and third, the adult feeding stage.

The Sac Feeding Stage: When the fish first hatches or breaks from the shell of the egg, it has attached to the lower portion of its body a small sac commonly known as the yolk bag or food sac. The contents of this sac furnish the baby fish with nourishment during the early period of its life. The length of time that the baby fish feeds upon the food sac depends upon two things, the temperature of the water, and the kind of fish. When the water temperature is low, the absorption of the food in the sac will be less rapid than when the temperature is high.



Two Unusual Photos of the Sturgeon

Fish are known as cold-blooded animals, while higher animals are warm-blooded animals. A low temperature increases the activity of warm-blooded animals with the result that they require additional food. In cold-blooded animals the reverse exists. When the temperature is low they become sluggish and less active, with the result that they require less food for their well-being. This has much to do with the slow absorption of the yolk bag when the water temperature is low.

With different species of fish the length of time the baby fish feed from the food sac varies greatly. The brook trout feed upon the yolk bag from fifteen to thirty-five days. With the yellow perch the sac feeding stage is from seven to ten days.

The Plankton Feeding Stage: While the yolk bag is being absorbed, the little fish are growing and gaining in strength so that by the time it is entirely, or very nearly absorbed, they are able to swim about in search of food. The first food taken through the mouth of all baby fish is plankton. Plankton consists of plant life and animal life of a very low form, ranging in size from that so small it cannot be seen without the aid of a microscope to that the size of a pin head; or in other words, plankton is the small floating or weakly swimming life of a body of water.

The exact time at which any species of fish changes from the plankton feeding stage to that of the adult feeding stage cannot be stated, as some species of fish live almost exclusively throughout life on these small organisms.

Adult Feeding Stage: Taking the adult fish as a whole, we find that their food consists of almost every kind of an organism living in and about the water. For convenience we will group their food under four heads.

Other Fish: The amount and the kind of food consumed depend much upon the season of the year; as an illustration, when crawfish are shedding their shells, they are the favorite food of the bass, but seasons of the year when the shell is hard, they are not eaten in so great a quantity. Again, at a season of the year when the gnats, the millers, and the moths are flying near the surface of the trout streams, the fish can be seen jumping for them, and they comprise the chief food of the trout for that period. But the food that can be found in the stomachs of our most important food fish and game fish at all seasons of the year is other fish.

Each moment of the day, fish are giving their lives in order that other fish may live. When food is scarce, most fish will divert to cannibalism. To guard against this, nature has provided food in the way of forage fish. These unfortunate little fish, were they not very prolific, or capable of depositing many eggs, would soon be exterminated, as many of them are provided with brilliant colors or shining sides in order that they can be more easily seen by the more fortunate ones.

The forage fish that nature intended to be in our waters as a food for other fish have been greatly reduced in numbers. This has been brought about by the unwise cutting of our timbers, by the pollution of the streams, by the introduction into our small lakes and our ponds of voracious species

Young Bullhead Catfish

of fish, such as bass and pike, and by the wholesale capture of the forage fish by the bait fishermen.

Through the efforts of the State Board of Fish Commissioners, much is being done to correct this condition, first, by passing laws prohibiting the wholesale capture of these forage fish; and second, by propagating them at a number of the hatcheries for restocking the public waters.

Crustacea: The crustacea of our fresh water, so called from their crust-like shell, consist of a large and complex group of organisms that can be roughly divided into water fleas, scuds, and crawfish. These organisms are of many forms and sizes and are preyed upon by fish of all species regardless of their age or size.

Insects: The insects upon which fish feed comprise another large group, including the larvae in various stages of those insects that go through a period of transformation in the water, like the May fly, the caddis nymph, the midge, the mosquito, and many others. The land insects eaten include almost all those found near the water; such as, the ants, the grasshoppers, the millers, the common house flies, many of which fall from the overhanging branches into the water.

Mollusks: The mollusks comprise our snails and our fresh water clams. The mature clams are not eaten to any great extent, but the young are readily taken by many fish, principally during the months of June and July, at which time they are about the size of BB shot, only, of course, of a different shape. Snails are eaten by many different kinds of fish but at certain seasons of the year they comprise the principle food for the sunfish, the yellow perch, and the bullheads.

Aquatic Vegetation: Very few of our fish consume any great amount of vegetable matter; but it plays such an important part with reference to fish life in a body of water that its various uses will be mentioned here.

Aquatic vegetation consists of many different varieties fitted to live under different climatic conditions. Some kinds thrive in still water, other kinds in swift water. The depth of water required for the different varieties ranges from many feet to a few inches. Some varieties live wholly submerged, others with the tops of the leaves exposed or floating on the surface of the water, and others with branches extending some distance out of the water.

Cycle of Food: Animals cannot organize food from inorganic substances, but use as food matter that which is already organized. Plants can and do organize inorganic substances into food, by changing during their growth and their decay certain salts taken from the water and certain gases taken from the air and the water which are essential for the life and the growth of the planktonic organisms. These organisms in turn are food for the baby fish.

Many planktonic organisms feed directly upon vegetable matter. These vegetables contain minerals that are essential to the growth of some of the planktonic organisms, such as the daphnia in the formation of their calcium shells. From observation and experience over a number of years at the fish hatchery, I am led to believe that the mineral contained in the shells of these tiny organisms is necessary for the well-being of certain small fish, and as yet, no artificial food that will take the place of these organisms has been discovered. This is particularly true of the baby black bass.

Aerating Agent: In every body of water the decay of vegetable and animal matter is taking place. During this decomposition, certain gases (carbon dioxide and others) are thrown off. Through the respiration of

aquatic animals, similar gases are thrown off. If there were no purifying agents in the water, the animals would soon become so saturated with these obnoxious gases that they could not exist. The aquatic plants in their growth absorb the carbon dioxide and, in turn, throw off as a waste product, oxygen, which is essential to the respiration of the fish and the other animals of the water. Thus it can be seen that the gases thrown off as a waste product by the plants are essential for the well-being of the fish, and the waste products thrown off by the respiration of the fish and the other animals are taken up by the growing plants.

In a body of water such as a trout stream, or a river where the water is flowing over falls, rocks, etc., plants do not play a very great part as aerating agents, nor do they in larger bodies of water, such as lakes, where the waters are lashed or given movement by the wind. However, in still bays and in small bodies of water which are subject to extreme summer heat and to long continued spells of calm, the aquatic plants are the chief aerating agents over these periods, and many times are the means of saving fish from suffocation.

Protection: During the early life of many fish, the dense growth of aquatic plants is sought as a place of protection from larger fish and other enemies. Among the dense growth of submerged plants the little fish have a chance of escaping the larger ones by darting rapidly through the foliage of their aquatic gardens. Plants, such as the water lilies, which have large floating leaves, are a great protection to fish of all sizes from fish-eating birds. This same type of plant also affords excellent shade for the fish from the direct sun rays.

A Base for Attachment of Eggs and Lower Plant Life: Some fish attach their eggs to aquatic plants where they are supported during the period of incubation. Many of the insects which serve as food for the fish also use the plants as a place to lodge their eggs during incubation. A number of the insects after hatching from the eggs remain on the plants during periods of transformation, and are utilized by the fish as food. Bodies of water not containing aquatic plants are shunned by these winged insects, as they seek out bodies having conditions favorable for their reproduction. Thus the fish in the barren waters are deprived of an important food supply.

There are a number of forms of lower life that are not free swimmers, such as, various kinds of algae, and these must have some sort of support in order to exist. Plant life affords support for these organisms. While these lower forms may not appear necessary to a body of water with reference to fish life, they are all organizers of fish food; and let us bear in mind that any body of water can support fish life only in proportion to the amount of food contained therein.

Enemies of Fish: The chief object in the life of any animal is to leave another of its kind in its place when it dies; and in order to do this, it must have a range where it can secure food, have conditions favorable for reproduction, and for the growth of the offspring until it is of an age where it is self-dependent.

Apparently, in fish life before man's interference, nature kept a nicely adjusted balance. Even though fish were preyed upon by many enemies, principally other fish and fish-eating land animals, the streams, the rivers, and the lakes were teeming with fish. One reason that fish were able to survive in great numbers was because of their remarkable range of fecundity or productiveness.

It appears that nature intended that, for every species, the number of offspring be sufficient to meet the losses to which the species was liable. Without a doubt, before the interference of civilized man, the greatest enemy of fish was other fish, and as an example of the range of fecundity in relation to the enemy (other fish) preying upon their offspring, we will take the fish commonly found in many of our small lakes by the early settlers; namely, the pickerel, the yellow perch, the golden shiner, and the bullhead.

In the spring of the year the pickerel are the first to spawn. As fish go, the pickerel are not very productive, an average sized female producing but a few thousand eggs. It is not necessary that they be so, as the eggs are generally deposited before the ice leaves the body of water, thus eliminating, to a certain extent, injury caused to the eggs by wave motion and by sediment. The ice is also a protection to the eggs from land animals preying upon them. The period of incubation is short, and with the water at a low temperature not many spawn-eating aquatics feed upon them, as most fish and other aquatic animals consume very little food during the winter months, or before the water reaches a certain temperature in the spring. The pickerel, being the first fish to hatch, and growing very rapidly for the first few months, are not preyed upon by any other fish of the same year's hatch.

Catches Trout on Doughball

J. Hansell French, Secretary of Agriculture, has just reported one of the strangest catches of brown trout in many moons. It remained for Billy Hill, 11, of Shawmut, Philadelphia County, to make this unique catch.

Billy was fishing in the Wissahickon, a stream that is expected to provide some fine sport for Philadelphia anglers this year. For equipment he had an inexpensive rod and line, and for bait he was using that popular standby of all good carp fishermen, a doughball.

This particular doughball, however, must have just struck the fancy of a big Wissahickon brown trout. At any rate, it struck and a real tug-of-war resulted. Billy finally emerged victor in the tussle and proudly carried home one of the finest brownies to be taken in the stream in a long time. It measured 20 inches in length.

The yellow perch are the next to spawn. The ice has now left the body of water, and aquatics are beginning to feed. The eggs will be preyed upon by spawn-eating animals, both terrestrial and aquatic, and the baby yellow perch will be the chief food of the baby pickerel for a certain period. To offset these losses the yellow perch are very fecund; a single female depositing from twenty thousand to forty thousand eggs.

The next to reproduce will be the golden shiner, a forage fish. The offspring of these unfortunates, because of their attractive appearance and their readily digestible character, will be preyed upon during the entire season by the baby pickerel and the

Young Garpike

baby perch, and a sufficient number must escape to furnish the chief fish diet for the adult inhabitants and still not be exterminated. For this reason, although they rarely exeecd six inches in length when matured, they reach sexual maturity at an early age and are very fecund.

The bullhead will be the last of the group to spawn, but because of the wonderful parental protection afforded the eggs and the baby fish, whieh was explained in a preceding ehapter, they need not be so productive. A female deposits only a few thousand eggs.

As eonditions are today the enemies of fish ean he elassed under two heads; namely artificial and natural enemies.

Artificial Enemies: Man has created the artificial enemies of fish by pollution or the emptying of substanees that are detrimental to fish life, and to the organisms and the plants that indirectly furnish food for the fish, into our streams and our lakes: and by the unwise cutting of the timber, which causes the fish and the fish eggs to be subject to frequent floods, droughts, and sudden changes of temperature. The excessive amount of sediment washed in from the surrounding hillsides during times of floods is most destructive to fish life and to insect life, and the streams are depleted by too much fishing.

Rod, hook, and line fishing has increased by leaps and bounds in the last ten years. This is due principally to the automobile and to increased population. The ease with which streams and lakes can be reached has indueed many people to go fishing who never indulged in the sport before.

The refrigerator system and modern transportation have enabled the commercial fishermen of the great lakes to ship their products in a fresh condition to all parts of the country. The delivery of these fresh produets to the inland markets has ereated a demand that has led the commereial fishermen, assisted by all sorts of modern tackle for the eapture of these great schools of fish, to exert every effort to supply the demand.

The worthwhile catches of these fish take place as they are moving in great schools to the spawning beds, and, unfortunately, they are eaptured and sold in the market before they have a chance to reproduce. This condition is offset somewhat by the artificial propagation of this important food supply by the Federal Government, by the various states bordering on Lake Erie, and by the Canadian Government.

Natural Enemies: The natural enemies of fish can be classed under five groups: other fish, reptiles, birds, amphibia, and disease.

Other Fish: Fish in devouring one another as food are enemies to each other, but perhaps the worst enemy is the fish that feeds upon the eggs of other fish. The worst of the spawn-eating fish, to my knowledge, are the common eel, and the lamprey eel, although science tells us that the lamprey eel i not a fish.

The spawning habits of the eel have been somewhat a mystery for generations, and frequently letters of inqury are received by the Board of Fish Commissioners in reference to the spawning habits of this peculiar fish. A few years ago a man wrote to the Board of Fish Commissioners that he was catching eels inside of which he discovered spawn which he thought to be the eggs of the eel. He sent a number of specimens to the Board of Fish Commissioners, and upon examination, it was found that the eels had been gorging themselves upon yellow perch spawn. Had he been a close observer of nature, he would have readily seen that had this been true spawn of the eel, it would not have been found in the digestive tract.

Reptiles: The reptiles that prey upon fish are water snakes and turtles. Water snakes are clever fishermen, and during the summer months can frequently be seen swimming along the shore line with fish protruding from their mouths. In my observation over a period of three years, in a pond containing bass, pickerel, yellow perch, bullheads, and golden shiners the water snakes were seen to be feeding principally upon small bullheads. Why the bullheads were the chief food I am unable to say, other than perhaps because they were the most easily captured.

The turtles, principally the snapping turtles, are another set of crafty fishermen. These creatures when feeding lie quietly on the pond bottom where the shell has the appearance of a moss-covered rock. As an unsuspecting fish swims by, it is easily captured by the lightning-like flash of the turtle's head and neck.

Birds: Although a large percentage of our native birds build their homes, feed and live about the water, only a few of them are fish eaters. Those most eommonly encountered or seen in the act of destroying fish, are certain species of ducks, the fish hawk or osprey, the heron, the bittern, and the kingfisher. Just how destructive these birds are to our wild life is probably not known, but I do know that at the fish hatchery, where large numbers of fish are confined in small areas, many of them fall a prey to the kingfishers and the fish hawks.

Amphibia: Of this order which includes our toads, our frogs, and our salamanders, perhaps few can be called destructive to fish life with the exception of the newts and the mud puppies. I have never seen newts in the act of eating live fish, but these little creatures are ravenous spawn-eaters. The mud puppies, of which there are but a few fortunately in the waters of Pennsylvania, eat both fish and spawn.

Disease: Fish, like all higher forms of life, are subject to various kinds of disease. Sometimes, these take on the character of an epidemic and before it is checked, or runs its course, the loss of fish is so great the species in a body of water is nearly exterminated.

In the early days, or when the streams were in their natural state, if these diseases existed, they probably were not of so serious a nature as they are today, when fish are living under more or less unnatural surroundings. These unnatural conditions have greatly lowered the resisting powers of the fish, and they are unable to throw off the disease germs. This was not the case before conditions were interfered with by man. (To Be Concluded)

Major Bass Waters of Pennsylvania

The following waters of Pennsylvania offer good fishing for smallmouth or largemouth bass, and, in some instanees, yield both species.

Armstrong—Allegheny River, Buffalo Creek.

Beaver—Little Beaver River, North Fork of Little Beaver River.

Bedford—Dunning Creek, Raystown Braneh Juniata River, Wills Creek, Bobs Creek, Brush Creek, Lake Gordon, Thos. W. Koon Lake, Woodbury Dam.

Berks—Maiden Creek, Manatowney Creek, Monocacy Creek, Ontelaunee Lake, Tulpehocken Creek.

Blair—Frankstown Branch Juniata River, Williamsburg Dam.

Bradford—Chemung River, Sugar Creek, North Branch Susquehanna River.

Bucks—Delaware River, Neshaminy Creek, Little Neshaminy Creek, Northeast Branch Perkiomen Creek, Queen Anns Creek, East Swamp Creek, Tinicum Creek, Tohickon Creek.

Butler—Breakneck Creek, Buffalo Creek, Wolf Creek, Yellow Creek.

Carbon—Mahoning Creek.

Centre—Bald Eagle Creek, Moshannon Lake.

Chester—West Branch Brandywine Creek, French Creek, East Branch Octoraro Creek.

Clarion—Allegheny River, Clarion River, Red Bank Creek.

Clearfield—Little Clearfield Creek, Sandy Liek Creek.

Clinton—Kettle Creek, Bald Eagle Creek, Pine Creek.

Columbia—Fishing Creek, Huntingdon Creek, North Branch Susquehanna River.

Crawford—Conneaut Creek, Conneaut Lake, French Creek, Oil Creek.

Cumberland—Conodoguinet Creek, Susquehanna River, Yellow Breeches Creek.

Dauphin—Conewago Creek, Swatara Creek, Susquehanna River.

Delaware—Chester Creek, Darby Creek.

Elk—Spring Creek.

Erie—West Branch French Creek, Conneaut Creek, French Creek, South Braneh French Creek, Lake Erie.

Forest—Allegheny River.

Franklin—Conodoguinet Creek, Conococheague Creek, Licking Creek.

Fulton—Licking Creek.

Greene—Dunkard Fork Creek, North Fork Dunkard Fork Creek, South Fork Dunkard Fork Creek, Penna. Fork of Fish Creek, South Fork Ten Mile Creek, Wheeling Creek, Whiteley Creek.

Huntingdon—Frankstown Branch Juniata River, Aughwick Creek, Juniata River, Penn Central Dam, Raystown Branch Juniata River, Sideling Hill Creek, Standing Stone Creek.

Indiana—Little Mahoning Creek, Yellow Creek.

Jefferson—Red Bank Creek, Little Sandy Creek.

Juniata—Tuscarora Creek, Juniata River.

Lackawanna—North Branch Susquehanna River.

Lancaster—Big Chickies Creek, Cocalico Creek, Conestoga Creek, Conowingo Creek, Conowingo Dam, Holtwood Dam, Middle Creek, Muddy Creek, Octoraro Creek, Safe Harbor Dam, Susquehanna River, Little Swatara Creek, Wenger's Mill Dam.

Lawrence—Neshannock Creek, North Fork Little Beaver River, Shenango River.

Lebanon—Little Swatara Creek, Swatara Creek.

Luzerne—North Branch Susquehanna River, Harvey Lake.

Lycoming—Muney Creek, Loyalsock Creek, Lycoming Creek, Pine Creek.

McKean—Allegheny River.

Mercer—Cool Spring Creek, Neshannock Creek, Sandy Creek, Shenango River, Little Shenango River, Wolf Creek, West Branch Wolf Creek.

Mifflin—Jacks Creek, Juniata River.

Monroe—Delaware River.

Montgomery—Manatawney Creek, Northeast Branch Perkiomen Creek, Pennypack Creek, Perkiomen Creek, Northwest Branch Perkiomen Creek, Ridge Valley Creek, Skippack Creek.

Montour — Chillisquaque Creek, North Branch Susquehanna River.

Northampton—Delaware River.

Northumberland—Chillisquaque Creek.

Perry—Buffalo Creek, Juniata River, Shermans Creek, Susquehanna River.

Pike—Delaware River, Lake Wallenpaupack.

Potter—Oswayo Creek.

Snyder—Mahantango Creek, North Branch Mahantango Creek, Middle Creek, North Branch Middle Creek, Penns Creek.

Somerset—Youghiogheny River.

Susquehanna—North Branch Susquehanna River.

Union—Buffalo Creek, Penns Creek, White Deer Hole Creek.

Venango—Allegheny River, French Creek, Sandy Creek.

Warren—Brokenstraw Creek, Allegheny River, Conewango Creek.

Washington—Little Chartiers Creek, Buffalo Creek, Ten Mile Creek, Cross Creek.

Wayne—Delaware River, West Branch Delaware River.

Wyoming—North Branch Susquehanna River, Tunkhannock Creek.

York—Bermudian Creek, West Branch Codorus Creek, Manges Mill Dam, Spring Grove Dam, Graybill Dam, Bairs Dam, Conewago Creek, Little Conewago Creek, Katz Dam, Shetter Dam, Elsesser Dam, Anderson Dam, Old Mill Dam, Bieseckers Dam, Susquehanna River.

WARDEN WOMELSDORF STAGES RESCUE

Very much in the limelight about Wilkes-Barre on May 16 were Warden Russell Womelsdorf of Kingston and Special Fish Warden Joseph Schappert, Wilkes-Barre. Their heroism and care in rescuing Helen Klokis, 23, of Parsons, who had leaped into the Susquehanna from the North Street Bridge, won the acclaim of hundreds who witnessed the rescue. Miss Klokis, who had plunged 30 feet into the river following the death of her aunt, is reported to be reeuperating.

North Branch of Susquehanna River, Famous Bass Water

A Wilkes-Barre paper had this to say about the reseue:

"Patrolman Lewis Loughlin and James Carney, in charge of the Kingston poliee car, were the first to arrive on the scene. Seeing the girl in the water Patrolman Loughlin made a hurried trip to the barns of Wilkes-Barre Railway Corporation and obtained a long length of rope.

"Fish Warden Russell Womelsdorf of 241 Pierce Street, Kingston, fastened the rope around his body while a erowd of male and female spectators on the bridge lowered him to the second pier near where the girl lay in two feet of water and loudly moaning.

"Tenderly picking the girl from the water, Womelsdorf shouted to the persons on the bridge that it would be impossible to raise her by rope because her back was injured. He asked for assistance.

"Special Fish Warden Joseph Schappert of 349 Dana Street, Wilkes-Barre, who was in the crowd prepared to go down but no rope was available.

"A call was sent to fire headquarters on East Ross Street and Deputy Chief Jay McGuire and a crew brought rope long enough to lower a man to the river.

"While the crew of firemen held the rope Schappert was lowered and reached the side of the warden. Both men immediately removed heavy eoats they were wearing and wrapped them around the body of the girl who was suffering from the cold.

"An estimated crowd of 300 spectators on the bridge shouted "Bring her up." "What is the matter," and similar expressions. These persons little realized that the girl was severely injured and might have suffered fatal injuries if she had been drawn up by rope."

Great work, Russ, Joe and the boys who helped you!

CONVERTED

A fellow starts a-fishin' 'bout the early age of eight—
The only thing he thinks of is the lowly worm for bait.
This is followed by a lot of frogs and minnies, erabs, and rind.
For years he's "nigger fishin'"—he's forgot to use his mind.

Some later—after listenin' to lots of silly soundin' "lies,"
Says he, "I think I'll get me some o' them high soundin' wet fish flies."
So he gets himself all fancied up with hip boots, rod and reel,
And after several "dismal days" begins to get the "feel."

"This sure is swell," says he to him as wadin' down the stream,
He hooks a few odd speckles that make the old eye gleam.
No slimey worms to thread, no minnies on the hook,
And the rheumatiz ahealin' like True Word from the Book.

But there's always some fool sucker to put ideas in a head.
"Dry flyin's what you ought to do—wet fishin's long since dead."

So put a slender leader on that lovely tapered line
And waft a gentle black gnat up stream when day is fine.
You'll swear—but then you'll get 'em—and the gout will all get well.
You'll say, "Oh, damn that guy—he may be right," but anyway, "What the H—l."

JACK BEEBER, Downingtown, Pa.

Practically all undersized fish will live if the line or leader is cut up close to the shank of the hook and the fish returned.

SPRING CREEK OPENING

THE third annual opening of the Spring Creek Project, better known as the "Fishermen's Paradise" on May 19th, near Bellefonte, was the most successful in its history.

While the weather was threatening and rain fell pretty generally throughout the state on Monday afternoon and practically all night, a factor which no doubt caused many sportsmen to postpone their trips till a later date, there were 464 registered fishermen on the project. The water was somewhat chalky. caused by the heavy rains, and was not in the best condition, especially for dry fly fishing, yet the catch far exceeded that of any other day since the project has been in operation.

Large trout caught and landed numbered 1560, but only 352 were killed and taken away. This, Commissioner of Fisheries Oliver M. Deibler believes, demonstrates a high standard of sportsmanship on the part of the anglers, as only one fish out of every five that were caught was killed. It also means that there are now over 1200 of these large trout still in the stream awaiting the anglers who will be there enjoying this sport throughout the rest of the season, which closes at Spring Creek on July 11.

The trout all averaged approximately 30% larger than those that were taken last year, and as the last year's catch averaged considerably larger than those landed the first year, this proves conclusively that these trout that have been taken with barbless hooks and returned carefully to streams do survive from year to year. It is established by the fact that no trout have been stocked on this area since the closing of the fishing last year.

Another significant fact was that 54 of these anglers fishing on the first day, who averaged eight trout apiece, did not kill a single fish. They all expressed themselves as having been thoroughly satisfied with the sport of catching these fish, and felt that these trout were too valuable to be killed for meat, and were worth many times more as a live sporting proposition in the stream than they would be dead in the creel. This is the doctrine the Fish Commission is preaching and had in mind when the Spring Creek project was established, that all the sport ends when the fish is landed, and that if it is killed, the sport is diminished just that much as no sport remains in a dead fish. Fishing is the one sport where you can eat the cake and still have it, and if the fishermen will adopt the slogan, "If You Will Catch More Fish, You Must Necessarily Kill Less," there will be abundant sport for all our anglers.

Clayton Peters of Lykens and a Friend With Their Trout Catches at Spring Creek Opening

EAST MATCHES WEST IN THIS FISH YARN

From the facile pen of H. H. Smith, ardent sportsman of Clark's Summit, comes this fish story and is it good! Read on and we think you'll agree.

He writes:

"I happened into Felton's sporting goods store in Scranton the night Six Spring Hatchery chanced off their fly-rod the second time, and I heard a man in there telling some of his fishing experiences in the West.

"He said when he was a boy, there was a certain trout stream he fished quite a lot, and in a pool he discovered a big trout. All summer long he tried to catch that trout but never a strike could he get, the wise old fish wasn't interested in any kind of bait he offered. Altho he often caught larger trout than this one, the capture of the reticent old bird grew to be a sort of obsession with him and every time he went fishing, he went and laid his offerings before this old high priest, but nary a nibble did he get.

"One day, as usual, he was 'practicing' dropping flies of many and various colors over the old sinner's lair and on the high bank on the right side of the pool he noticed a wild plum tree, and as he looked, a ripe plum fell into the water, and instantly there was a little swirl, and the plum disappeared.

" 'Aha!' says our willain. 'If it's plums you desire, plums you shall have.' So, he said he cautiously climbed the bank, put a plum on a hook and carefully dropped it over the bank into the pool below. What followed is the reason we like to fish for trout. Only he was handicapped by the fact that there was only the one opening in the bushes to the top of the bank and the bank was so steep and high that he could not get down to the water.

"Since all things must end, the fish was finally tired out, and then the problem of how to land him presented itself. There was really only one way, and that the old fashioned one of 'hawse' him in. So he leaned as far over the bank as possible and tried to lift the fish up to him, but he slipped and fell in the pool and frightened the fish so he broke loose, and so far as he knows is still at liberty.

"Joe Curt was in the audience, and being one of our dry fly aces, he felt impelled to relate one of his experiences.

"He said when he was a boy a game warden offered to take him to a little stream near Pittston where he knew a big trout lived. They fished hard but the big fellow didn't manifest any interest in their offerings, so when noon came they sat beside the stream and ate their lunch.

"Sitting back to back, Joe was facing the pool, and he noticed that when the birds hopped among the raspberry bushes growing along the bank, the ripe berries would fall into the water and be immediately sucked under.

"This gave Joe an idea and he tried to bet the Game Warden that he could catch the big trout.

"Much to the latter's disgust, Joe stuck several berries on a hook and dropped it into the pool and after a very exciting fight lauded a nice big trout.

"But the end was not yet, for Joe relates that when he took the trout home and his mother cleaned it, she got enough raspberries out of the trout to make a nice raspberry shortcake.

"And that's that!"

PALMYRA SPORTSMAN BACKS SLOGAN "REDUCE YOUR KILL"

In a recent letter to the ANGLER, Dr. J. C. Nissley, of Palmyra, stresses the importance of care in releasing bass and other game fish from the hook before returning them to the water. An ardent advocate of the Board's new slogan, "If you would catch more fish—KILL LESS," he practised this creed while fishing last summer on the Susquehanna River. He believes that the gentleman angler is vital to our better fishing program. Following is his letter, in part:

"Your PENNSYLVANIA ANGLER is a most splendid magazine, and I wish to heartily endorse the policies as outlined in it.

"I eagerly look forward to my copy, and have found few numbers that had not some useful data, as well as splendid stories in it. I wish every fisherman in Pennsylvania would subscribe and fish according to the advice you have given.

"I have had one of the most successful seasons in 1935 that I have had for twenty years, catching 111 bass, three perch and seven wall-eyed pike or salmon. Many of the bass, which were of legal size, I returned to the water, always wetting my hands and removing them carefully from the hooks. This is one of the things that many well-meaning, good sportsmen do not know. They remove a fish that they wish to return with dry hands. I believe that most of the fishermen are good sportsmen, but they need to be educated along these lines.

"We, down here in this neck of the woods, have been taught that it is not numbers of fish caught, but good sportsmanship and acts of mercy while on the stream that make for us the future of our fishing. To that end, I have practiced conservation.

"Many of the fish I caught were returned to the stream unharmed, for I could not help having a feeling of pity for these gallant fellows that put forth such a terrific struggle for their life, and, having given me the sport of seeing their majestic beauty and supreme fighting qualities, I was more than glad to put many that were of legal size back into the stream.

"Another thing, I have killed many snakes, but until I read it in the ANGLER, never knew that you may find them by turning over rocks.

"Again commending you upon the good work you are doing, and wishing you and your valuable magazine the greatest success, I am . Yours for better fishing,

J. C. NISLEY, D. D. S."

HANDY PERCH

George Zimmerman, angling enthusiast and secretary of the Lehigh County Fish and Game Protective Association, tells of a perch that "refused to give up the ghost" when a pickerel swallowed it.

Irvin A. Krasley, inspector of the Allentown highway department, was fishing with angleworms at Peck's Pond in Pike County. Hooking a six-inch perch, he was just ready to pull it from the water when a twenty-inch pickerel struck and swallowed it. Krasley caught the pickerel, and, when he cut the fish open, found the perch, alive and kicking, in its gullet. Released, the perch, with a flip of its tail, swam away.

A Peck's Pond frog, Krasley found, gave this remarkable perch a run for endurance honors. The inspector killed a watersnake, while on the same trip, and, noting a bulge in the reptile, proceeded to operate.

"He found a good-sized frog in the snake," writes George, "blinking its eyes and wondering what Jonah felt like when he was swallowed by the whale."

A new type of angleworm, that, it is believed, will be superior for fishing, has been discovered by James Cannon, Allentown bait dealer, according to George.

"The worm in question," he informs us, "is said to have two distinct tails. Cannon has so much faith in the belief that it will be a fish getter that he is planning to start a worm ranch where only two tailed worms will be reared."

"BROWN" CANNIBAL

Warden Frank Brink had difficulty believing his own eyes one day last fall while stocking brook trout in Bushkill Creek, picturesque Pike County trout stream. And here's the why of it.

Frank was assisting Frank McKeongh, driver of one of the Commission's trucks from the Pleasant Mount hatchery in Wayne County in distributing the fish. He had carried a pail of trout, ranging in size from 6 to 10 inches, to the shallows of a pool in the stream. These shallows dropped abruptly into deep water, possibly six or seven feet in depth.

As the brook trout were carefully released from the bucket, there came a golden flash and a giant brownie surged at the released brook trout. Brink made a wild scoop at it with the pail, and through some miracle or other succeeded in capturing it. The incident had occurred so abruptly, that Brink immediately carried his catch to the truck in order that McKeough might see and confirm it. The big brown trout extended, from tip of nose to tip of tail, completely around the inside of a 14-inch pail. While McKeough and Brink did not measure the fish, they were certain its length was over 24 inches, and handling as many fish as they do, the measurement must have been just about right. After looking it over, they returned it to another section of the stream.

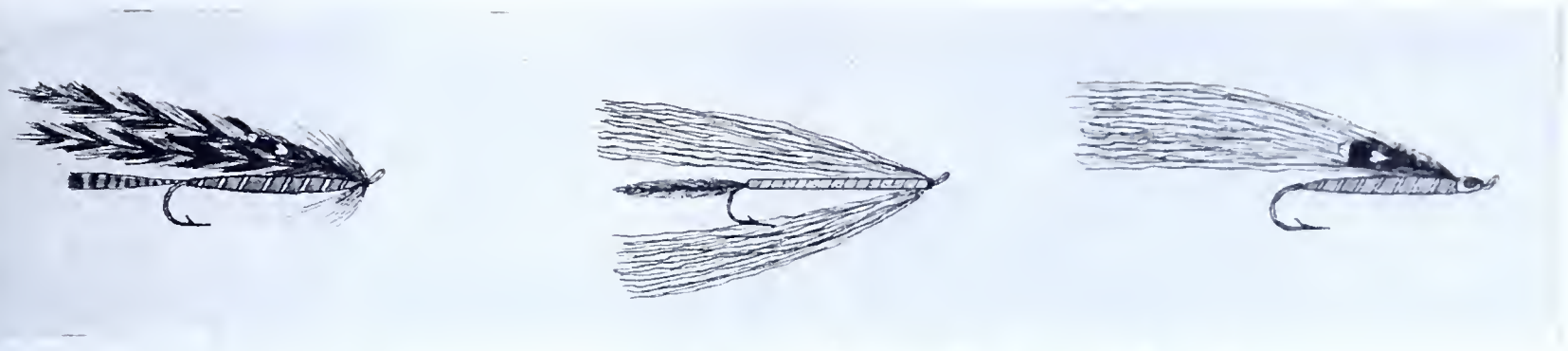
Speaking of Catfish catches, how's this? Donald Dumrouf of Pittsburgh is the young angler displaying his creel.

I seen one o' the worst skunks on the big crick last week I ever run inter an' this here skunk I'm speakin' erbout didn't wear no pelt either. It was gettin' late in the afternoon, an' I was headin' fer the sunny hole with a can o' worms. A feller kin hev some fair fun with them red bellied sunnies an' mebbe when it's comin' dark kin hook a cattie er two.

Well, ennyways, I sees this feller a-fishin' fer all he was worth in the shallows at the lower end o' the big hole where the cliff drops sharp inter the crick. They's some rattlin' big bass a-nosin' erbout in thet water an' you know thet right erbout this time o' the year, they start a-spawnin'. Ain't none o' our fellers hereabouts thet I know of would take a bass now so I didn't figger nothin' wrong on this feller's fishin' till I sees what he's usin'. He hed a reg-'lar pike fishin' outfit spoon an' all. Jest erbout then he hooks inter a gol-wallopin' big bass. Course the fish fought, but he landed it. I figgered he'd let it go but not this skunk. He was jest agoin' ter kill it an' my blood was aboilin' hotter all the time. I lets out a yell an' heads fer him. He was yeller clean through, thet feller. Whinin' an' sayin' as how he didn't mean no harm. Ennyways, thet bass was let go an' it headed right fer the nest it was takin' care of. I tole thet skunk thet he'd better keep off the crick ef he knew what was healthy fer him an' he vamoosed in a hurry.

'Tain't only the big bass I'm thinkin' of when I says thet this kind o' fishin' is erbout the lowest a feller kin hev anythin' ter do with. Mebbe two thousand little fellers is left when the old man is taken off the nest an' the minnies, eels an' almost ennything thet swims kin gobble 'em up in a hurry when the old one's gone. I'm mighty glad there ain't many fishermen o' the stripe I've writ ye erbout. An' thet's a big reason why we oughter hev some good bass fishin' in the days ter come.

A simple line drier can be made by rolling a large blotter of the desk variety into a cylinder and wrapping the line around same.



For Big Trout—Try Bucktails

By R. W. McCafferty

THE thoughts of catching large trout are entertained by every fisherman, and if you are one of those fellows unafraid of trying new fishing methods, try Bucktails. This lure has accounted for the taking of an astounding number of large trout during recent years.

Bear in mind though, that it is just another lure and is not infallible. Fish it carefully and methodically. Present it on a leader no heavier than 2-x and give it an action that leads the fish into believing it is something to eat, not a piece of steel and some hair thrown into it and jerked through the water in such a manner that it scares into epileptic spasms every trout within sight.

Many anglers have experienced difficulty in connecting with rising fish when using Bucktails. Barring personal errors, there are, no doubt, many reasons for this failure. A common cause is the type of Bucktail used. Many of these flies are tied with the hair much too long. Best success seems to come on a fly tied with the hair extending beyond the bend of the hook not more than a third the length of the hook shank. The reason is obvious. Unless the fish intends to swallow the fly in one big gulp, he will strike at the tail. In the event the hair is too long he will not be striking deep enough to get the barb with the result that you feel the strike but it is impossible to hook the fish.

Another cause is retrieving too fast. In this case the fish underestimates the speed the fly is traveling. Because it is traveling unnaturally fast the fish can not possibly connect except by accident. Slower retrieving is the only correction necessary.

Still another reason may lie in the size of the fly. There is a tendency to use Bucktails that are too large. Don't worry so much about colors or patterns but get a variety of sizes tied with both light and dark hair. A combination of light top hair with dark hair underneath, or vice versa, is good.

A fine standard pattern is plain silver tinsel body with any of the above mentioned hair colors or combinations. Jungle cock shoulders added to these make a very attractive fly. At least to the angler if not to the fish.

The fact that Bucktails are usually large, being tied on hooks sizes 2 to 8 and sometimes 10 does not signify that you should use heavy leaders. A good leader for this purpose is one with a heavy butt and tapering to refina. To this tie two lengths of 2-x gut. The heavy leader gives you enough power to cast the fly and at the chances of the fish seeing the leader.

In constant "Buck" fishing do not use your lightest rod as the strain put upon it will prove too great and a "set" or "kink" will result.

To many the best success in fishing these flies comes when they are fished to imitate minnows. These fellows will probably fish it in a different manner or perhaps won't even give it a chance to prove its worth. Study the movements of the minnows in a stream, then imitate their actions as closely as your skill permits. If success is not immediately forthcoming don't blame the fly. Maybe your clumsiness scared the fish. If you get a couple of rises or "interests" but fail to connect try another size fly. The one you are using may be too large or too small.

Do not overlook the value of changing your methods of imitating. Cast into water in which a minnow can swim. There is probably nothing that looks more foolish to a trout than a Bucktail, supposed to look and act like a minnow, swimming against a current sufficiently strong to roll stones weighing a couple of pounds. If you must trail it through a heavy current make it appear to be swimming laboriously. If you know exactly where a trout is located don't cast directly to or three or four feet to the side of him. If the water is low, the splash, even though very slight will probably frighten him. Direct your cast to some point where it will not immediate arrest his attention. Then carefully manipulate the "Buck" toward the fish. Make it simulate a minnow looking for food or wandering, all caution aside, into a new pool. If you don't raise the fish, be certain your fly is sufficiently far away from him before lifting it from the water, as he certainly is watching it.

Generally speaking, cautious casting in fishing brings best results. There are times, though, that by slapping the water with your cast and causing your fly to go through many crazy maneuvers the results will come faster.

It is very difficult and useless to direct the fisherman to fish up, down, or across stream, for the geographical conditions within and surrounding the stream determine that entirely. There are too many fellows, who, if fishing up or down will continue to fish that direction regardless of what the conditions warrant. This one thing accounts for the defeat of a considerable number of fishermen. The more adept you become at changing your fishing methods or tactics the more successful you become.

BEDFORD SPORTSMEN HOLD BANQUET

One of the outstanding sportsmen's events of the year in Pennsylvania, the banquet of the Bedford County Federation of Sportsmen's Clubs, affiliated with the Pennsylvania Federation, was held at Fort Bedford Inn in Bedford on Wednesday evening, May 13. Over 200 sportsmen and their guests enjoyed a fine ham dinner and the varied program which had been arranged.

Speakers of the evening included J. Hansell French, Secretary of Agriculture, and Oliver M. Deibler, Commissioner of Fisheries. In addressing the gathering, Mr. French emphasized the importance of planting more shore cover, including willows, in state streams as an aid to better fishing. Sportsmanship, the need of more fishermen adopting the code of fishing for sport rather than meat was stressed by Commissioner Deibler. He also explained the system of fish distribution now in effect.

WPA STREAM IMPROVEMENT PROJECTS IN DISTRICT 10

Hon. Harry E. Weber, member of the Fish Commission from Philipsburg, recently received the following data concerning stream improvement plans for district 10 to be carried out by the Works Progress Administration. S. N. Hewlett, Supervisor of Construction Projects, furnished this information.

Jefferson County: Little Sandy Creek, application in process of preparation; Little Mill Creek, application in process of preparation.

Centre County: Rush Township—Six Mile Run, application submitted to Harrisburg; Banner Township—Spring Creek, application in process of preparation; Banner Township—Spring Creek, approved by Harrisburg. Will start as soon as men are available; Millheim Borough—Elk Creek—Application submitted to Harrisburg.

Potter County: Wharton, Abbott, Summit Township Streams, application in process of preparation.

A nice catch of bass can be made at night, the darker the better. Flies fished trout fashion over the riffles is the answer.

Perkiomen Creek, Montgomery County Photo by La Mar Mumbar.

FLY TYING DISCUSSED AT OLD TOWN MEETING

Over 300 boys and members of the Old Town Sportsmen's Association attended the May meeting of the association held in the Junior High School on Thursday evening.

The program, consisting of moving pictures and a talk and demonstration of fly tying by Lawrence Madison of State College, proved very interesting.

At the business meeting which followed the entertainment, the delegates to the Clearfield County Federation of Sportsmen's Clubs meeting held at Madera on April 27th, gave the following report: The meeting was very well attended with over half of the member clubs having representatives at the meeting. Ramey, Smoke Run and Osceola Mills sportsmen's associations were admitted to the federation which makes 24 clubs of the county members of the federation with a total membership of 3600.

At the meeting the following officers were elected: president, Charles H. Reed, Houtzdale; vice-pres., Joseph Franko, Beccaria; sec'y, James Murray, Houtzdale; Charles Shoff, Madera, and Oscar Barrett, Clearfield, county delegates.

President Murray of the Houtzdale Club presented Houtzdale's plans for a sportsmen's field day to be held on June 18th, at which time Seth Gordon, executive secretary of the Penna. Board of Game Commissioners is expected to speak. The federation endorsed the field day and it is expected that all clubs will attend.

R. K. Nelson, chairman of the fire arm committee of the association reported that the committee had secured a field to be developed by an N. Y. A. project for small bore and straight-away shooting. This field is located back of the Paterson brick plant and is very well adapted for this purpose. The project will get under way immediately.

The association decided to plant willow trees along the west bank of the river above the borough line. These trees were planted the latter part of the week and at a later date additional trees will be set in.

FLY CASTING FOR BASS

(Continued from page 4)

amount of time allowed on the pause for the line to reach its backward limit of flight but this can easily be mastered with a little practice and patience the same as the other fundamental rules. Once the fisherman learns the proper timing, the most of his troubles will be over. Any good fly fisherman can assist the novice, and, if he is a good sportsman, he will do what he can toward putting fly fishing across as a conservation measure if for nothing else.

The seven year locust when fished alive and buzzing makes an excellent bait for large brown trout and bass.

BUCK TAIL ROUNDUP HELD AT TIONESTA

Meeting at the V. F. W. Hall in Tionesta on the evening of May 8, members of the Tionesta Chapter of Buck Tails and their friends enjoyed a fine program of entertainment. Featured speakers were Dan R. Schnabel, Board Member and better known as "Uncle Dan," Robert R. Lamberton, Game Commissioner, and William E. Hughes, president of the Venango County Buck Tails. The meeting was called by Tom Lander of the Tionesta Chapter.

"Uncle Dan" stressed in his talk the necessity of good sportsmanhip on the part of our fishermen in improving Pennsylvania fishing conditions and emphasized the importance of the Board's new slogan, "If You Would Catch More Fish — Kill Less." He explained the work of the Board in its efforts to bring back good fishing to streams now subjected to intense angling. Mr. Lamberton spoke on the game conservation program now in effect to better hunting conditions. The program, followed by moving pictures and lunch, was exceptionally well planned.

On the day following the meeting, Mr. Lander accompanied Commissioner Schnabel to Pymatuning Lake where they witnessed the seining of young carp by representatives of the Commission.

WESTMORELAND GROUP HAS EMBLEM PLEDGE

A splendid plan for increased interest in good sportsmanship has been adopted by the Westmoreland County Sportsmen's Association, affiliated with the Pennylvania Federation of Sportsmen's Clubs, according to W. M. Dom of Greensburg, first vice-president. A copy of the pledge accompanies this article.

Mr. Dom writes:

"You undoubtedly have seen Sportsmen's Association's buttons, as there are many who supply their members with such and we have two adjoining counties who have them and supply all of their local units for ALL memberships."

"Westmoreland County wanted their button to be worn by gentlemen ONLY, who go upon stream or into wilds and fields,—with some assurance that they would be worn by men who would not disgrace the name of the association; that all such members were 'Sportsmen.'

"We all know that there is a fair percentage of men who join our sportsmen's associations for purely selfish purposes. While their membership helps the general fund of their association, their actions sometimes tend to defeat the purposes of our aims.

"It was our desire to make our button an honorary emblem, which a real sportsman would be pleased to wear; and accordingly we have placed the securing of it on a merit basis, *only*, to be worn by those who have obligated themselves to act accordingly.

"Most of the county units that I know of, upon the payment of the individual's dues, give him their button without any limitations or restrictions as to its use. Thus they are distributed sometimes to unworthy, who do not value them and frequently may be worn by those guilty of all the crimes upon the criminal code.

"Before securing the button of the Westmoreland County Sportsmen's Association, which is good only for 1936, the individual must sign the application and pledge (copy of which is enclosed) present to his Local Secretary, and upon payment of a fee he will receive our button. Only those desiring and applying received them. The application is sent to the Secretary of the County and kept on file by him, the local secretary only keeping a list of names of those who have received buttons.

"These buttons will be taken from any who may disgrace the ideas of sportsmanship or acts unbecoming a gentleman.

"We expect to make them an emblem of honor, worthy of all striving to live up to —Thus, increase membership GOOD."

WESTMORELAND COUNTY SPORTSMEN'S ASSOCIATION EMBLEM PLEDGE

I, ...of .....
Club
a paid-up member of the ..... Ass'n pledge myself as a Sportsman member that I shall absolutely obey the Game and Fish Laws, will be considerate of the rights and property of others and appreciate the privilege of hunting or fishing upon their land.

I will consider it an honor to be permitted to wear the emblem of the Westmoreland County Sportsmen's Association and herewith make application for one of their buttons for my own use only.

If convicted by my own conscience or evidence of others that I have violated law, done damage to others without having acknowledged and making amends, or been untruthful or ungentlemanly:—This is your authority to ask and demand the return of the emblem, without recourse, unless I demand a trial by those authorized to hold a hearing.

Date ....
Applicant for button of County Emblem

CLEARFIELD SPORTSMEN PLAN BIG FIELD DAY

The annual meeting of the Clearfield County Federation of Sportsmen's Clubs was held at Madera on Monday evening, April 27th. About half of the county clubs attended. At the present time the Federation takes in 24 clubs with a total membership of around 3600.

The meeting was called to order by Chas. H. Reed, vice president, with James Murray as acting secretary.

Ramey, Osceola Mills and Smoke Run Sportsmen's Clubs were admitted to membership in the County Federation.

A vote of approval was taken on proceeding with the nomination and election of officers which resulted in the following: Chas. H. Reed, president; Joseph Franko, Beccaria, vice president; James Murray, Houtzdale, secretary-treasurer; Charles Shoff, Madera, county delegate and Oscar Barrett, Clearfield, alternate delegate. Prior to the election the delegates moved to formally accept the resignations of Fred Weidner and S. K. Williams, Clearfield, as Federation officials. E. J. Crosovolt, last year's county delegate, gave a resume of the state Federation meeting held at Harrisburg. He was accompanied by Oscar Barrett.

President Livingston of Clearfield Old Town Sportsmen's Association gave an interesting talk on proposed House and Senate bills affecting the sportsmen which resulted in all clubs communicating with their congressmen and senators urging them to support House Bill S-3958 on Federal Control of Stream Pollution and asking them to oppose all bills restricting the proper use and ownership of firearms.

President Murray of the Houtzdale Club, presented Houtzdale's plan for a sportsmen's field day on June 18th at which time Seth Gordon, executive secretary of the Game Commission is expected as a speaker. The Federation endorsed the field day and it is expected all clubs will attend.

Full cooperation is looked for this year from all clubs in the County Federation and it is thought much can be done for the sportsmen.

Five Bass Taken Last Season by William Caul from Neshaming Creek

CALLS TO FISHIN'

On the hills the snow is meltin'
And outside the rain is peltin'
Sort o' drear.
Though the clouds the rain are bringin'
I don't care—my heart is wingin'
With the bluebirds as they're singin'
Soft and clear.
For the willows all are sproutin'
And each little bud is shoutin'
"Quit your poutin', quit your poutin',
Take your rod and go a-troutin',
Spring is here!"

Submitted by Gerry Stout

HERE AND THERE IN ANGLERDOM

H. R. Weaver, of Wilkes-Barre, reports the landing of a 22½-inch brown trout on Bowman's Creek, Wyoming County, recently by Thomas A. Foster, of Kingston. Mr. Foster's feat in landing this trout is one for the records. He was using, according to Weaver, a 3½ ounce rod, an HDH tapered line, and get this—a leader tapered to 3-X. That old reliable Ginger Quill tied on a No. 12 lured the big brown to its last fight. Four other fine trout completed the catch.

Those big trout of the Portage Creek, according to Special Warden J. H. Bergman, Butler, seem to have a particular liking for the lures presented by fourteen-year-old Harold Bailey, of Emporium. Maybe it's because Harold has been doing his good turn to the trout by killing more than his share of watersnakes. Recently, Harold connected with a whopping big brown trout (he's shown holding it on this page), weighing three pounds, 9 ounces. It was taken on a worm. The smallest trout this young Waltonian retained this year measured 8 inches in length.

Roger Bartlett with his Largemouth Bass, 3¼ pounds landed last season in Perkiomen Creek

Speaking of yellow perch, the catch of Lawrence Frey, 15, of Estella in Elk Lake, Sullivan County, is worth talking about. Lawrence landed a perch measuring 15½ inches, a nice fish in any body of water, according to Warden Myron E. Shoemaker.

William P. McGinnis, of Hubbard, Ohio, finds great sport on Pennsylvania trout waters each year, according to Special Warden J. H. Bergman, of Butler. After taking out a non-resident fishing license early last season, he fished on the Little Scrubgrass Creek, in Butler County, and scored with a fine catch of trout. Three were brownies, averaging 18 inches apiece, and two brook trout averaging 14 inches.

Fishing in Chappel Fork and Linn Brook, McKean County, early this season, Clyde Johnson and Harry Johnson, of Bradford, caught 15 and 13 brook trout respectively, according to Warden J. Albert Johnson, Bradford. Harvey Quinn, of Bradford, caught 13 brookies on Morrison Run, the fish ranging in length from 7 to 12 inches. A big brown trout, 19½ inches in length and weighing 3½ pounds was caught on the West Branch of the Tuna. While fishing in the Allegheny one day in April, S. Cattoni, A. Croner and C. Harman, all of Bradford, caught 57 suckers in a day's fishing. A number of the fish weighed from 3 to 3½ pounds. The catch was made in two hours.

An 18-inch brown trout weighing two pounds was caught on Beaver Dam Run, Erie County, on April 17th, by A. J. Rupp, of Erie. Mr. Rupp was first to enter a catch in the *Dispatch-Herald* Sport Store fishing contest being conducted this year, according to Ray Peebles, sports editor of the *Dispatch-Herald*.

Fishing in the Juniata River on May 9th, Mrs. E. H. McKenzie, of Windber, caught two big suckers, according to Special Warden W. A. Keebaugh. One of the fish measured 16 inches in length and the other 18 hours.

Columbia County trout fishermen made many good catches on Fishing Creek early in the season, according to Special Warden Nick Ratamess, of Berwick. Following are some of the anglers who scored: Frank Marsicano, Mocanaqua, 15 trout; R. B. Kliss, Nalty, 10; U. S. Dunlap, Ashley, 9; Joe Marsicano, Berwick, 15; Peter Lucas, Berwick, 15; Charles Lewis, Berwiek, 15; and Carl McHenry, Jamison City, 12.

"Spike" Heverly, well-known Bellefonte trout fisherman, had the distinction this year of landing a big brown trout on a bass plug, two hook model. His eateh measured 18 inches in length and weighed an even 3 pounds.

One of the finest brown trout to be taken on fly this year is that reported by George Zimmerman, of Allentown, secretary of the Lehigh County Fish and Game Protective Association. Pine Run, Carbon County, yielded the catch, a brownie measuring 22½ inches in length, having a girth of 11 inches and weighing 3 pounds, 8 ounces, to Herbert F. Everett, of Allentown.

Bergman also reports that Harry Munsell, of Emporinm, made a catch of 11 brownies on the Portage recently while fishing dry fly. His eatch ranged in length from 8 to 12 ineches.

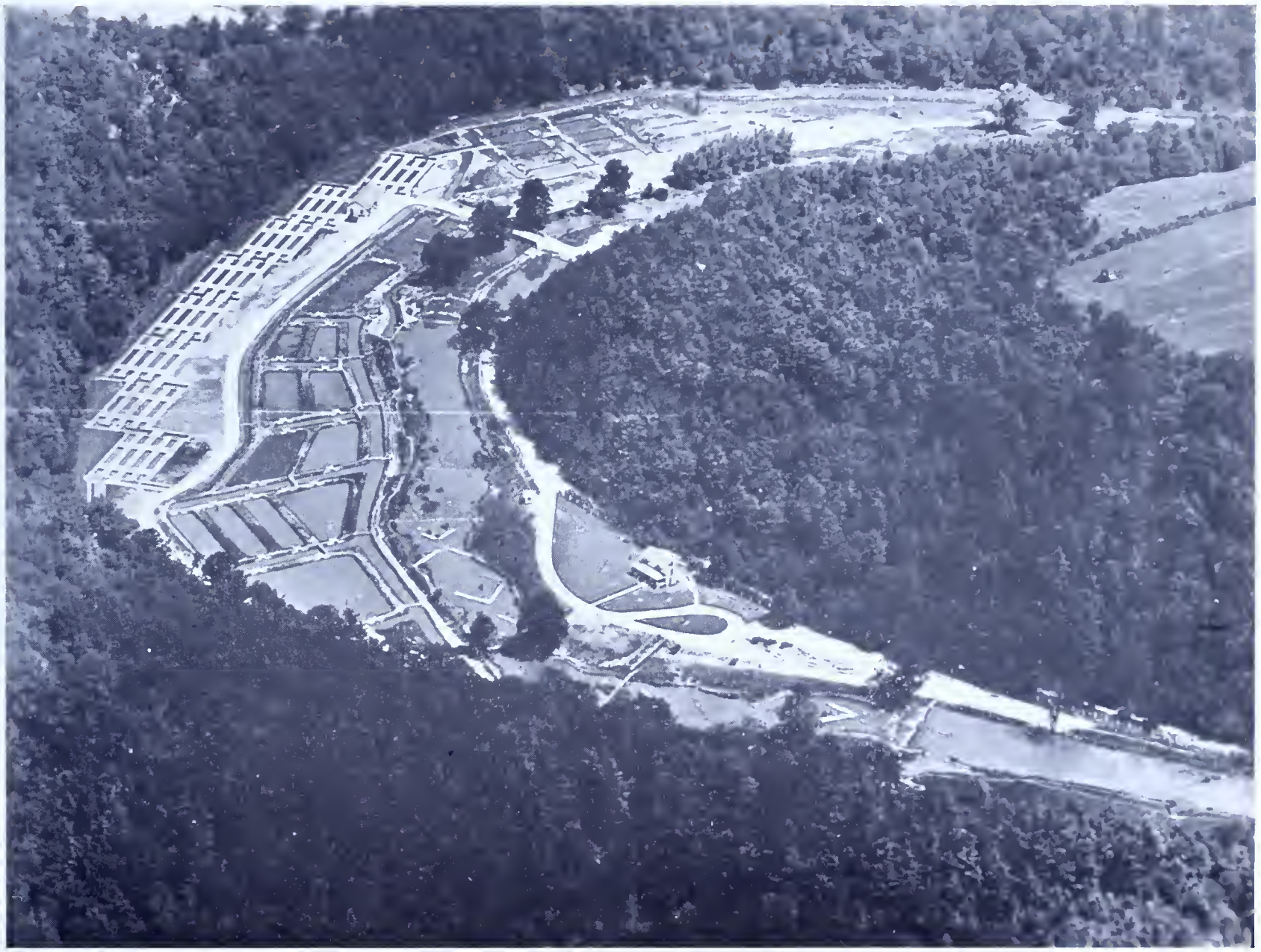
WALTER E. WOLFE DIES

In the death of Walter E. Wolfe, 61, of Williamsport recently, the ranks of Pennsylvania's army of sportsmen lost one of their outstanding members. A Williamsport paper made the following editorial comment on his passing:

"This generation owes a debt, which will be shared by generations to come to men snch as Walter E. Wolfe. Mr. Wolfe, whose snddeu death Smday evening was a shock to his many friends here and throughout the state, was a sportsman in the truest sense of the word, for he was concerned that the privileges of enjoying the sports of the field and stream, from which he derived so much pleasure, shonld be made available to others.

"For many years Mr. Wolfe devoted considerably more of his time, energy and talents to the promotion of conservation, the encouragement of wise legislation protecting the sports of hunting and fishing and to the organization of sportsmen for effective work along these lines, than he did to personal participation in the pleasures he loved. He thought so highly of the outdoor opportunities available to Pennsylvanians that he devoted himself to safeguarding these opportunities and guaranteeing them to generations to come. His was an important contribution of unselfish service."

In addition to having taken an active part in the affairs of the Izaak Walton League, Mr. Wolfe was foremost in the activities of the Consolidated Sportsmen of Lycoming County, one of the strongest conservation units in the state. He served as President of this organization during its second year.



Aerial View of Spring Creek Project, Centre County

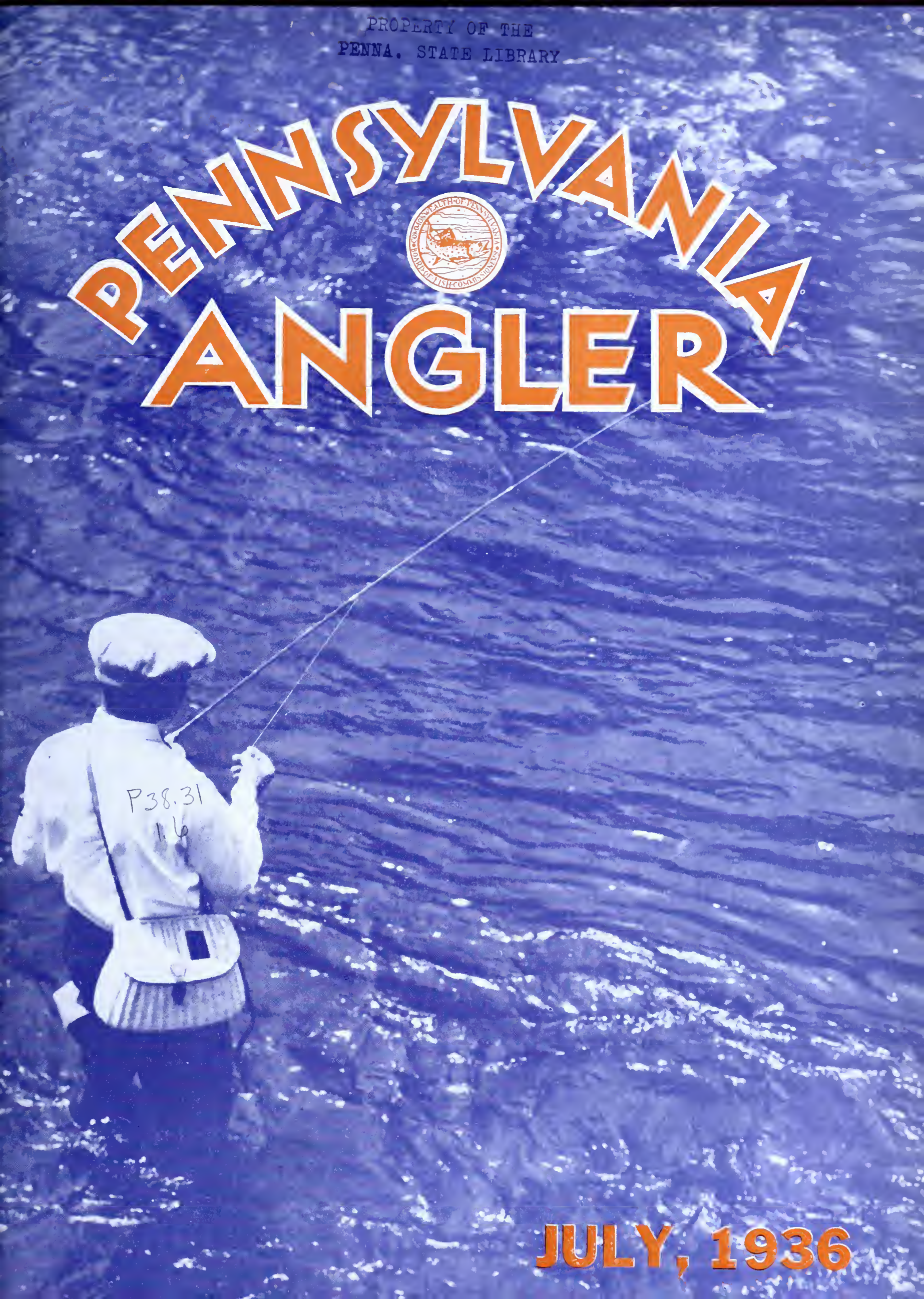
Brother

Fisherman—

If You
Would Catch
More Bass—

Cut That
Snell and
Let Small
Bass Go!

PENNSYLVANIA ANGLER



JULY, 1936

OFFICIAL STATE PUBLICATION

PENNSYLVANIA ANGLER

JULY. 1936
Vol. 5 No. 7

PUBLISHED MONTHLY
by the
PENNSYLVANIA BOARD OF FISH COMMISSIONERS

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Five cents a copy — 50 cents a year

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ALEX P. SWEIGART, *Editor*
South Office Bldg.. Harrisburg, Pa.

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NOTE

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All contributions returned if accompanied by first class postage.

IMPORTANT—The Editor should be notified immediately of change in subscriber's address. Please give both old and new addresses

Cover Photo by La Mar Mumbar

PENNSYLVANIA ANGLER

Vol. 5 No. 7 JULY, 1936

EDITORIAL

JUST FISHIN'

The Board of Fish Commissioners, in my opinion, is pursuing a most vital function in its policy of planting, in addition to trout, bass and so-called game fishes, other popular species, the sunfish, the bullhead catfish, the yellow perch and the sucker. Not alone does this insure balanced stocking, which we believe to be most advantageous to our waters, but it means sport for thousands of women and children, who, each year, find recreation along Pennsylvania waterways.

There is no fishing scene, to my mind, more relaxing or enjoyable than the presence at some deep pool on creek or river, of a group of boys with their long cane or cut poles, tin cans full of worms and all the other crude essentials that go with "just fishin'." And with many women taking up the sport of Izaak Walton, there is no more certain way in which we can insure them sport than through this stocking of sunnies, catties, perch and suckers. We should not overlook the fact, also, that thousands of our fishermen find enjoyment and rest in fishing for the more humble fishes of the inland waters including the extremely homely bullhead catfish. All-round sport for our rapidly-growing fishing population is a worth-while goal to achieve.

A strong love for this restful sport of fishing, one of the most ancient in the history of mankind, is inherent in many of us. Glancing back through the years, we fishermen who today find our sport with finely tapered leader, double tapered line, three or four-ounce rod and fragile dry flies, may recall that at the start it was a bullhead catfish that caused us to run most of the way home to show the catch; or a sucker, or, if we lived in the lake region of northeastern Pennsylvania, a sunfish or yellow perch. Perhaps it was even a horny chub, but the memory of those early fishing days must remain vivid in our minds. If we can retain, in our modern fishing picture, the scene of barefooted boys quietly angling for cattie or sunfish and catching a few of them, we shall have gone far toward realization of our objective of providing the most varied fishing possible in our State.

Photo courtesy Allentown Chronicle and News.

Two Boys With Their Catches at the Opening of the Allentown Pond

I believe that one of the most noteworthy and commendable steps in our fishing program was taken recently at the city of Allentown, when a pond which had been stocked with catfish, perch and sunfish solely for fishing by boys, was opened to angling. Conceived by George Zimmerman, secretary of the Lehigh County Fish and Game Association and our local warden, Joel Young, this idea has proved deservedly popular and should mean much to the future licensed fishermen of Allentown. We have also provided a fishing pond of this type at our Spring Creek project in Centre County and I feel that many boys secured enjoyment at the project famous for its big trout this year.

It is not prejudice in favor of fishing that causes me to believe that today we have no finer recreation for our children than the sport of angling. Few can deny that in the quiet atmosphere along a stream or lake, boys as well as grown-ups are benefited physically, mentally and spiritually. We have a definite need today for just this type of influence, particularly as it affects our youth.

Let us glance over the totals of sunfish, catfish and suckers stocked last year by the Commission. We released 1,081,038 blue-gill sunfish from one to 4 inches in length in suitable public waters; 414,437 bullhead catfish from 2 to 10 inches in length, and 14,130 suckers averaging 5 inches in length. I feel that this stocking is every bit as essential to the future of our fishing, and particularly vital to the future licensed fishermen, as the stocking of the popular game fishes.

Curtailed though our fishing waters are through pollution, this stocking which takes into consideration every class of fishermen in the state must eventually work to the benefit of our entire fishing public.

O. M. Dribler

Commissioner of Fisheries

Protest Motorboat Use on Pymatuning Lake

By Oliver M. Deibler
Commissioner of Fisheries

THE great Pymatuning Dam, to which the sportsmen and recreationalists from all over western Pennsylvania have been looking forward most eagerly for a great many years, demonstrates most decisively that at least in one diversion there will be no disappointment. That refers to the fishing and fishermen.

When the Board of Fish Commissioners began stocking the lake for more than a year before it was filled, there was considerable criticism among some fishermen, who felt they knew better than the Board about what kind of program should be followed out in the stocking of this great body of water. However, the Board acted wisely, as is being proved by the results of the stocking program so far, by following as nearly as possible the same program that Nature laid down and adopted when the lakes of northwestern Pennsylvania were created.

In many of our lakes throughout the state, the fishing has been ruined by injudicious stocking and interfering with the balanced program, which Nature first laid down. This has helped to a greater extent to ruin the fishing in these lakes than the heavy toll that has been put on our lakes through the fishermen. In a certain lake in northwestern Pennsylvania, every species of game fish known has been planted in this particular lake with the result that today the fishing is almost a thing of the past, and a few old cannibals of several species alone remain.

The Board carefully studied the conditions throughout Pymatuning lake as soon as the water was impounded, and on the results of these studies they adopted the policy that has been carried out to date. To date, the Board has stocked approximately 70 million fish in this body of water. The greater number, of course, were in the fry stage, but many thousands of adult game fish were also stocked.

In the spring of 1935, the second year after the water had been impounded, there was quite a scare among the fishermen and sportsmen who were greatly interested in the future of this lake, when thousands of small carp appeared in the channel directly below the spillway of the sanctuary lake. We were asked to seine as many of these small carp as was possible. We took a number of truckloads of these small fish that ran in size from 3 to 4 inches, and planted them in other waters where sportsmen requested them.

It was the opinion of the Board that, as soon as the game fish developed to sufficient size, there would be no more migrations of these small carp, and that game fish would take care of any further crop of the small carp, just as they have been doing in nearby Conneaut Lake, and many other waters where both the carp and game fish, especially bass, inhabit the same water. This opinion of the Board was clearly demonstrated this spring when the fish began moving up towards the headwaters of the big dam. Instead of any small carp appearing at all, a great number of those that escaped our nets last year appeared but these were now from 7 to 9 inches. Arrangements were made to again seine these excess carp from the lake, but after attempting to do this during several different periods, we found we were inflicting

Andover-Espyville Highway, Connecting Ohio and Pennsylvania, Crosses Main Lake About the Middle

Section of Crowd at Dedication Exercises When Dam was Completed

greater damage to the game fish than any benefit derived by removing the carp. Many of the seine hauls produced 75% game fish, consisting very largely of black bass and salmon, and since, during warm weather, it has been proved that these fish can not be handled, no matter how carefully, without great loss, it was decided that further seining operations would be discontinued.

It was pleasing and reassuring to the sportsmen, who visited the lake during these operations, to note the splendid growth of bass, salmon, perch and bluegills that were taken during the seining operations. It was not uncommon to find thousands of bass and salmon up to 17 inches in length.

With the dam being closed for another year until July 1, 1937, when it will be open to the public for fishing, these fish will have put on additional growth and millions of others will be also developed to legal size so that this great body of water does truly hold in store some wonderful fishing for our anglers after July 1, next year.

The matter of motor boats on this great lake has been a very controversial matter, in which the sportsmen to a very large degree, are united in preventing the use of any motor craft on the lake. We are herewith presenting a letter from the Wilkinsburg Sportsmen's Club, which reached our desk a few days ago. This letter, in no unmistakable terms, expresses the view of this very active organization.

June 14, 1936.

Board of Fish Commissioners,
Mr. O. M. Deibler, Chairman.
Dear Mr. Deibler:

We, the Wilkinsburg Sportsmen's Club, consisting of three hundred and seventy-one members, do hereby make known that we are opposed to any plan whereby allowing any motor boat on the Pymatuning Dam.

We were very much pleased with the first ruling to not allow motor boats on the lake, but we understand that there is a movement to change this rule so the lake can be commercialized.

Hoping you will hear our plea for a continued QUIET place for real nature lovers to go,

We remain,
Yours very truly,
Wilkinsburg Sportsmen's Club.
M. E. Smith, Secy.

Many other protests are reaching our office and urging that the rule prohibiting the use of motor boats on the lake be rigidly enforced and not modified. Many of these protests cite the fact that, for every one that did use a motor boat, there will be five hundred others who will enjoy canoeing and some quiet fishing.

Of crowded streets and busy men
And if perchance fate decrees my wish
I'll spend my days where I can fish
—Orland M. Penick

FISHERMAN'S PHILOSOPHY

With rod and reel, bait line and hook
I hie away to a mountain brook
What matter if no fish are caught?
I'll find the thing for which I've sought
I'll find the thrill of expectant joy
That only I knew as a carefree boy
And thus I'll while long hours away
Loath to return at close of day
Loath to return to the city's din

Railroad Highway forming Embankment between 2500-Acre Refuge Lake and the Lake Proper. Spillway from Sanctuary Lake can be seen under Bridge

Spillway and Lower Portion of Sanctuary Lake where Thousands of Migratory Water Fowl can be seen

FEEDING PIG SPLEEN GIVES TROUT CATARACT

Pig spleen is bad meat for young trout. It ruins their eyes.

This in ten words is the gist of experiments reported to the American Society of Zoologists by Prof. Walter N. Hess of Hamilton College.

Trout reared under artificial conditions have always given a good deal of trouble by developing cataract. Nobody knew why. Prof. Hess undertook to find out. He kept a large number of young trout in several separate enclosures, under varying conditions of light, some in company with trout already cataract-afflicted, to see whether the trouble was contagious, others on different dietary regimes. All of the young trout did well except the groups to which pig spleen was fed in their meat ration. Of these, more than 17 per cent developed cataract. It was concluded that the malady was due to the improper food.

LLOYDS INSURES FISH IN TWO ENGLISH RIVERS

London.—Trout in the Rother and Dudwell rivers, near Burwash, Sussex, have been insured by Lloyds.

The policy, written because of the possibility of injury from chemicals used in the "descaling" of a pipe line between the rivers and a reservoir, is the most recent "freak" one issued here.

Surface Lures for Bass

By Myron E. Shoemaker

ALTHOUGH surface lures for bass, which are cast with the fly rod, are becoming more popular each season they are by no means a creation of just recent origin. As near as I am able to learn they were first made and used by Mr. Louis B. Adams, New York City, about 1914, but it is within the past three or four years that these lures have forged to the front very rapidly. In fact so much so that most every fishing tackle house has numerous creations of surface lures to offer for the market today. Many individual manufacturers also have a fine product to offer the fishermen. Naturally there has been considerable experimenting with these lures as to construction, design, etc., to insure success as a lure

Hair Frog

to take bass and the many improvements are very noticeable.

The first type which appeared was a combination of bucktail, feathers and either a cork or wood body. The body was either a natural color or was painted the desired color best suited to the taste of the individual who used them. For color, different colored feathers were used while the bucktail usually remained natural. According to the pictures of these early lures they represented most anything but a bug. Their general appearance seemed to be just a bunch of feathers and bucktail crudely assembled to a large hook and mounted on the cork or wood body to insure floating. They appeared in various shapes, sizes and color combinations. Some looked so absurd that they were scoffed at by the fishermen and yet when they were put into use they were very successful bass getters. Since these early creations there has been a decided improvement in surface lures and today there appears on the market a fine assortment of bass lures that really will catch fish. The neat appearance is attractive to the eye of the prospective buyer and to the eye of the bass which is a ready riser to the surface lure. The construction of most of these lures today is almost entirely of bucktail or deerhair, which is closely tied to the hook and shaped to the desired size and design thought best by the maker. Small scissors are used to closely clip the deer hair to the finished product. Cork and wood bodies are almost eliminated. These lures may be purchased in different sizes as to hooks, different shapes, solid colors or color combinations which seems to be the demand of the fishermen. Some are so constructed that they do queer things on the water surface when motion is imparted to them by a slight flick of the rod. Others make a commotion on the water which throws up a spray of water about them, when given motion with the rod. And the motion given with the rod to others makes very little disturbance on the water. Nearly all of them will float without any difficulty and others are so made that it is almost impossible to sink them after hours of use.

There has been considerable difficulty experienced by many fishermen in that they were unable to hook bass on many of these lures and the reason was no particular fault of the fisherman but was mostly due to the smartness of the bass which is by no means easily fooled. Most of these lures were made with a cork or wood body and many are so made today. A bass, just the same as most any other fish, has a real sense of touch and can very readily detect the cork or wood body as a foreign substance and immediately spits it out before the fishermen can make the strike and set the hook. The lures made of deerhair entirely have a soft body and are not detected so readily with the result that more fish are hooked as the bass closes its mouth and momentarily holds the lure.

So far as representing any bug the most of these bass lures are a complete failure. For, the greater part they are simply the creation of the individual maker's imaginary power and do not represent any natural bug but still they fool the bass. As stated before, they are offered in many patterns as to color, shape and size. This, no doubt, is brought about by the likes and dislikes of the fishermen. One desires a large lure with a large hook for various reasons, while another wants a smaller lure and a smaller hook. One likes solid colors and another wants a combination of colors Some desire certain shapes and others demand another shape I have seen two fishermen on the same body of water not a hundred yards apart, one catching bass on one shape, color and size while the other fisherman was taking just as many bass on the same or another type of lure of another shape, color and size. I do not say this is always the rule, because there are times when bass

Hair Wiggler

are very temperamental and will take only a certain color or size lure. But when they are really in the mood of taking surface lures there seems to be very little choice to them.

The large assortment of lures offered the fishermen readily opens the way for the purchaser to overload with lures. This seems to be a serious drawback to the beginner because he is of the opinion the cost is too great. And he is right, if he goes to extremes in making his purchases.

Mouse

I am a firm convert to the fact that confidence in a lure is half the battle and would advise any beginner to start out with only a half dozen or so lures, and they can all be of the same make and of two sizes and whatever color suits his taste. Later, if he is like most fly fishermen he will increase his collection of lures and will give no thought to the number or variety.

This immediately brings us face to face with the argument that the expense is greater than live bait. As a matter of comparison and not for the sake of an argument, let's compare the cost for a moment. Live bait usually cost about four cents each, and a fisherman who would take thirty bait astream would spend $1.20 with the chance that some would be dead before being used. Others would be ruined by the savage strike of a bass, and if it happened to be one of those days when the bass were just tailing the bait, there would be a total loss of bait and very few fish. Let's take 17 weeks during the bass season and fish one day a week at a cost of $1.20 per week, which is a total of $20.40. This amount would purchase surface or other lures for a number of years, or the lures for one season and almost the complete fly fishing equipment, if a fair one were to be purchased. For $5.00 a fisherman can purchase enough lures for the season, if he fishes once a week over the period of 17 weeks mentioned. It is true that these lures do not last forever, neither do the live bait, but they will outlast any type of live bait and will catch more fish on a single lure. When these lures become a little worn from use, do not be misled that they are of no further use. A few hairs in the so-called wing or tail may be destroyed but the effectiveness is not destroyed. As a matter of experiment as to the durability of some of these lures and the possibility of a cheap lure taking fish just allow me to refer to one evening in 1935 when I experimented with two surface lures of different color and of the same size. In a little more than two hours, I had taken 70 bass and rock bass and the lures were still in condition to catch fish. This was principally due to the close tying of the body to the hook. The wings were nearly gone but most of the tail was still intact. No doubt some of these fish were caught more than once because they were released to the water at once and unhurt. These lures cost fifty cents each and if these 70 fish had been

caught during numerous fishing trips in the season, the expense of the lures for the season would have been far below that of live bait. I dare say that it would have taken at least $8.00 worth of live bait to take that many fish, and the chances are that many of the fish would have been dead in removing the swallowed hook, if great care were not used or the hook cut off entirely.

Practically the same equipment may be put into use for the surface lures as when fishing with wet flies or fly and spinner except that the line and leader should be greased to insure floating, which assists greatly in making the strike and the general handling of the line. Little effort will be necessary in picking a greased line from the water where if it were submerged, it would be necessary to retrieve the lure a greater distance toward the fisherman before the pickup and backcast. For the surface lures I would recommend a 9½ foot rod with plenty of snap and action and not too stiff. There is quite a bit of wind resistance to some of these lures and if the rod has action from the butt clear through to the tip there will be little difficulty in finding the necessary power in the rod to propel the line forward with the lure eventually following to its goal on the water.

Bass Buger

Too stiff a rod will not only make casting more difficult but will put unnecessary strain on the angler's arm and wrist. A rod with action clear through from butt to tip naturally bends evenly all the way or nearly so. When the rod is bent there is expansion of the outside curve and a lot of compression on the inside curve. Just before the backcast, this curve is in the rod and as the line leaves the water, the natural compression on the inside curve is of great assistance by its natural reaction in sending the line on its backward flight. The same thing applies on the forward cast and the strain on the angler is lessened if the rod is not too stiff.

As bass fishermen do not confine their activities to the smallmouth entirely and as smallmouth bass are not in one type of water it is necessary to have at least some knowledge of how to present the lures to the bass. Largemouth bass are mostly confined to the lakes and the smallmouth to the flowing streams. It has been my privilege to fish the famous North Branch of the Susquehanna River since boyhood and naturally I have observed a few conditions which I am glad to be able to relate to the reader for what they may be worth.

One common mistake in casting for bass seems to be distance. It is not necessary but sometimes comes in handy. Most bass are caught on short casts as they are not so easily frightened as the trout. Careful or delicate casting for bass is not always necessary as in trout fishing although accuracy means a lot when the bass are rising for natural flies. In fishing smaller, clear streams or smooth shallow water of a larger stream the lure should be presented with great care and as lightly as possible avoiding all splash or disturbance. For swift or deep water, a little carelessness in making some disturbance will make no difference and at times is just what causes an immediate strike. In fishing the streams for smallmouth bass the fisherman will encounter different types of water and different depths. These surface lures should be fished just the same as when using dry flies for trout, that is, they should be fished up the stream to allow them to float naturally with the current. They also may be fished across the current to some extent but will not float so far before a decided drag will be noticed due to the tightening of the line as the current pulls against it. When fishing the swift shallow water which is a little rough just before it begins to smooth out as it flows into the deeper portion of the stream, the lure should be allowed to float perfectly natural unless it is a lure which imitates a living and moving object. When fishing the portion of the stream that becomes deeper and smoother water, the lure may float naturally or motion may be given it with a slight flick of the rod. This motion should not be given so much that the lure will remain in motion constantly. Rest periods of short intervals should be allowed. There will be the swift, smooth water in the shallows and the deeper pockets that lay off at one side where the bass at times love to lie. The lures should be allowed to float naturally in this type of water, and if no strikes are secured, then motion can be given the lures with the rod and the motion should not be strong enough to make too much disturbance. In the deep pockets, it is well to drop the lure on the water and await results before moving the lure; then let it rest for a short period. Many bass are found in the swift, deep water and especially where there are plenty of big rocks which break the flow and form eddies below the rocks. In presenting the lure in this type of water, a little splash of the lure sometimes attracts immediate attention, and, if not, more action should be given to it. As the lure is cast near the little eddies below the rocks, it should be allowed to float in the current along the eddy and if nothing happens a cast into the eddy may bring the desired result. Few bass will be found in the deep, slow moving water until they go there for winter quarters usually in early October. A cast along the deep rocky shores where there are hiding places sometimes brings up a bass but the best location is along the gravel bottoms in shallower water when they are feeding on small surface flies. Care should be used in making the lure light carefully on the water and let the lure float naturally until something happens and if no strike results then a very little movement will do no harm and possibly a lot of good. Bass sometimes

Spent Wing Buger (Top View)

look at a lure a long time before deciding to strike it. Again they will strike the moment it hits the water.

In fishing for largemouth or smallmouth in lakes there will be no current and the lure should be carefully cast and left motionless for a short period before moving it when it should be allowed another period of rest. The bass can see the lure the moment it hits the water and may decide to look it over before striking. Many times it will be necessary to move the lure a number of times before anything happens. However, it is always well to be prepared because under these conditions lightning strikes unexpectedly. To my mind, the uncertainty of when a bass will strike a surface lure is what makes it so fascinating. There is no time for dreaming. The dreams come after a successful day of sport.

The question is often asked—Can bass be taken during the day with surface lures or must one wait until dark or after? Many bass are taken during the day as well as after dark. Quite contrary to the general opinion of many fishermen that bass will not rise to a surface lure during the heat

Spent Wing Buger (Side View)

of the day, I have been very successful many times. In fact, some of the largest bass I have taken have been from noon to 4 P. M. and in extremely shallow water. Some of them were hooked after the rise not more than fifteen feet away. Early morning also will produce many rises. Of course, the ideal time to use the surface lures is when the bass are rising which usually happens in the evening and after dark. I have seen bass feeding on many occasions during the middle of the day and have caught them then. When bass are feeding on natural bugs or insects in the evening they are sometimes very selective as to color and size and a little experimenting may bring results. But once the fisherman has the lures in which he places confidence he will have all the sport he desires. There are times when bass will rise to no kind of lure presented and again they will rise to most every cast.

As before stated, many of these lures are unlike natural bugs but there are some which do represent other forms of life and

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Watersnake Control

The Watersnake Problem in Pennsylvania

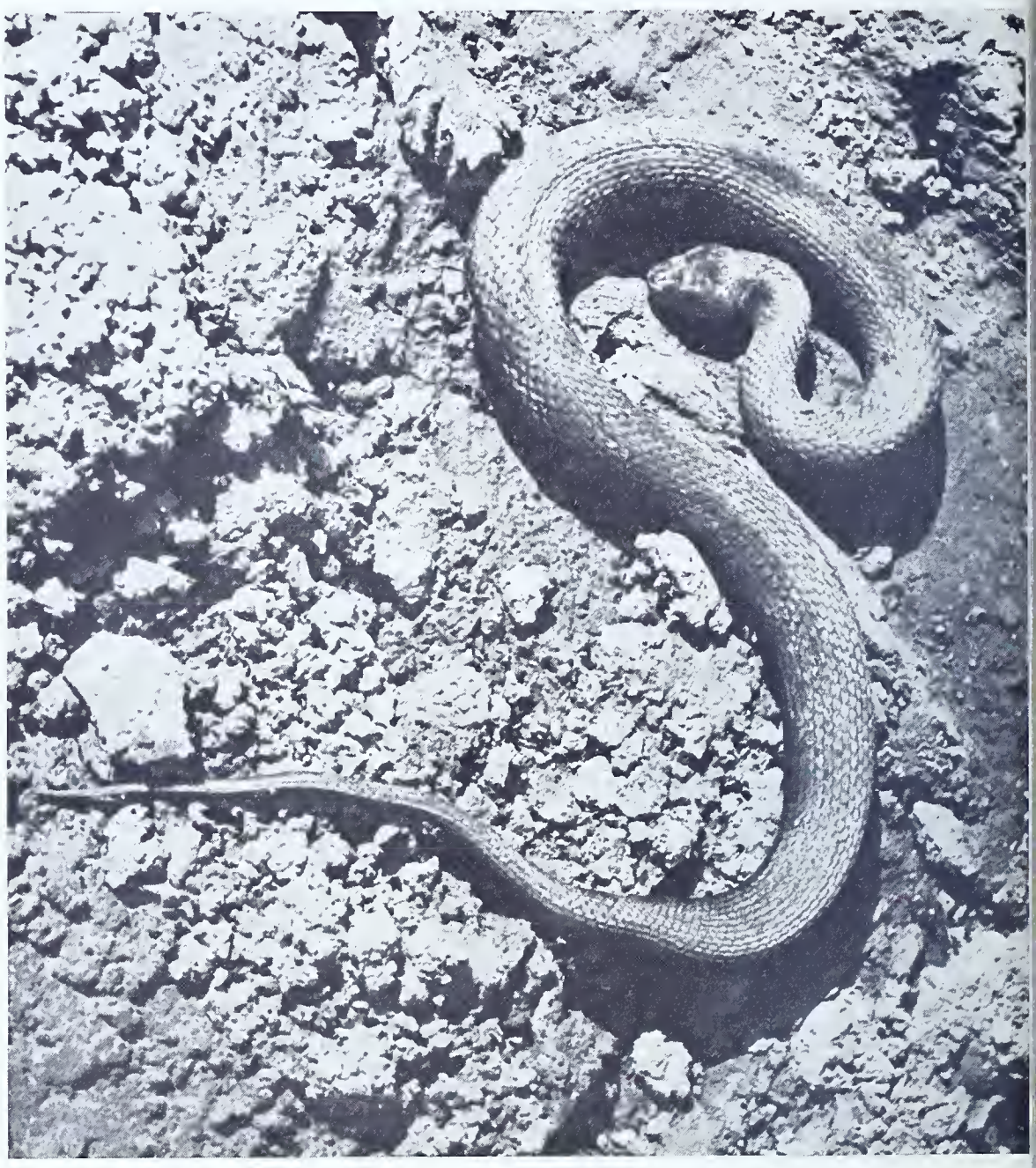
By Alex P. Sweigart

THE water snake eampaign, conducted vigorously by the Board of Fish Commissioners in Pennsylvania during the past three years, has occasionally been termed "a campaign of extermination." No descriptive term could be more inaccurate. The Board, faeed with the difficult problem of providing a maximum of good fishing on waters drastically reduced in mileage through pollution, has endeavored to stress carefully balanced stocking of the various species of fishes: to benefit the carrying capacity of these waters through stream improvement, and to reduce the number of natural predators, particularly reptiles, that take toll from fish life. "Control" and not "extermination" of any predatory species is the proper descriptive term.

We may group natural fish enemies in Pennsylvania today roughly under three heads, (1) fish eating birds, (2) fish eating animals and (3) fish eating reptiles. The bird group does not rank as a serious problem, save at the hatcheries where large numbers of fish are being held. There is a great deal to the contention by bird lovers that kingfishers, the comparatively rare osprey or fish hawk, and blue heron add a picturesque touch to the general fishing scene on our streams and lakes. At the hatcheries, of course, control of birds that prey on fish, is necessary. As for the second group, the mink and otter are rare. The raccoon, when water is low in mountain streams, is an expert fish eatcher, but its game qualities and valuable fur are compensating factors in the opinion of many of our sportsmen.

It is in the reptile family that we find the two ranking fish predators under modern conditions, the snapping turtle and the watersnake. Glutton though it is, and individually the most destructive fish enemy of the inland waters, the snapping turtle must take second rank to the watersnake as a destroyer for it is not nearly so numerous as the latter. Properly, then, we have foeused the predator problem on the watersnake. Of the arguments advanced in its favor, one is outstanding—the contention that watersnakes serve to benefit the supply of fish by often taking weak and diseased individuals, thus insuring more hardy brood stock for reproduction. It is not probable that the watersnake population will ever be reduced to the point where this function will not be adequately accomplished. Proper control as to number and not extermination should assure those who hold this theory. A few watersnakes on a good stretch of fishing water are not undesirable; multiply that number by one hundred, (this figure is not exaggerated in eertain sections of the state) and the need for an extensive snake-killing campaign should be readily apparent.

We are not minimizing the role which the watersnake and other fish predators at one time played on our streams and lakes.



Natural balance, as it must have existed in primitive Pennsylvania, causes one to marvel. Early writers commented on the vast runs of herring and shad in the Delaware and Susquehanna rivers; low temperature mountain and meadow streams teemed with charr or brook trout, and the warmer waters produced vast numbers of native species of fishes—pickerel, bullhead catfish, sunfish, yellow perch, minnows of the various species, suckers and eels. It was necessary that agencies exist to prevent overpopulation of the waters with fish life, and to check the increase of fishes, nature provided fish-eating reptiles, mammals, and birds. These predators constituted a vital control factor in the primitive conservation picture.

When today we consider two angles to the watersnake problem, it is not difficult to understand just why, of the natural enemies to fish that at one time existed in large numbers, it alone has managed to continue plentiful. Environment is the first factor favoring watersnake survival. In the lush growth of the shoreline of lake or stream, its coloration aids in concealment. Extremely aquatic by habit, it is elusive in the water, a graceful, sinuous swimmer. Save when prompted by hunger, it is shy and quickly takes to concealment in weed bed, beneath a large boulder or other shelter. Its blunt wedge-shaped head presents a small target for hastily hurled rock or elub, and for that matter is a difficult object to hit with a rifle.

Female watersnakes are very prolific, the second factor favoring their increase. Frequently, a mature female will bring forth from 30 to 40 young, usually in late August or early September. These young, born alive, are active little creatures almost from birth, and their growth is comparatively rapid until they enter hibernation in the autumn. Even though preyed upon by many birds, animals and fish, the young survive in substantial numbers.

The watersnake problem in Pennsylvania may be considered under two phases, its presence on trout streams and its presence on warm water streams.

On Trout Streams

As an enemy to trout, this graceful reptile today takes first rank in the predator group. Particularly during periods of low water, and on many of our mountain and meadow streams during the past five years this condition has prevailed during the summer months, is the watersnake a serious menace to the trout population.

Instinctively timid fish, trout when alarmed often seek protection beneath an overhanging bank, log or rock. The watersnake in its hunting adapts itself quickly to taking advantage of this habit. Gliding into the pool, it follows its quarry to the place of shelter and frequently has little difficulty in seizing it. The Fish Commission has had numerous reports of the finding of from six to ten trout in the stomachs of large snakes.

This predator must also be considered a major natural enemy to trout over legal six-inch size which have just been stocked. Until the fish raised under hatchery conditions become acclimated to their changed environment, watersnakes frequently may take many of them. It may require a week or longer until the stocked trout become accustomed to their surroundings and during this period, watersnakes, if numerous on the stocked water, find even less difficulty than usual in making a kill. A snake of medium size, owing to the peculiar ease with which it is able to distend its jaws to accommodate the size of its victim, is capable of swallowing without much difficulty a ten-inch trout.

While not so numerous on trout streams generally as it is on warm water streams and lakes, the usual size of these waters must be considered. Even though a smaller number of snakes may be present on a meadow or mountain stream, these reptiles during periods of low water may make heavy inroads on the trout population.

On Warm Water Streams

Strangely enough, the threat of the watersnake to fish life of the warmer inland waters is not primarily to the game fishes such as the bass, pickerel and wall-eyed pike. We have stressed in the past the vital importance of an abundance of minnows, stone catfish and other forage fishes to game fish areas. While the watersnake will occasionally prey on the bass, pickerel or pike, observation leads to the belief that its basic supply of food, insofar as fish are concerned, is found in the forage fishes. Shiners, chubs, fallfish and other species of minnows as well as stone catfish on certain waters are generally more abundant and therefore apparently more easily secured. Bullhead catfish and suckers also comprise important items in the diet of the snake.

It has been observed, relative to the watersnake's feeding habits, that very often bullhead catfish and stone catfish are taken. It may be that the habits of the catfish are in part responsible for this. Bullheads and stone cats are by nature roily water or after night feeders, usually lurking beneath rocks or other cover during the day in periods of clear water. This tendency makes them easy prey for the watersnake when it seeks its food on the stream bed.

During the past four years, the Fish Commission has been stressing in particular the need of saving the supply of forage fishes in bass waters. It is realized that upon an abundance of live forage must be based any appreciable improvement in our fishing for bass. We must, therefore, regard the shake's taking of forage fishes, which would otherwise furnish food for game fish species, as one of the most serious counts against it. Prolific though they are, the various species of forage fishes are today being subjected to reduction in number from three sources—carnivorous fishes such as the bass, wall-eyed pike and pickerel, fishermen who use them as live bait in fishing, and natural predators.

In illustrating the constant drain upon forage fishes by game fishes in our waters, let us take as an example Lake Wallenpaupack in Wayne and Pike counties. This famous inland fishing ground affords two outstanding varieties of fish life upon which the carnivorous fish may prey, the golden shiner and the young of the yellow perch. Competing for this food supply in the lake are the adult perch, the small-mouth bass, the brown trout, the largemouth bass, the pickerel, the walleyed pike and the rock bass. Of course, the young of the sucker, the sunfish and the bullhead catfish also furnish some food, but the brunt of the entire season's feeding must be borne by the golden shiner. Obviously, an extreme abundance of shiners must be available if the lake is to continue furnishing the type of bass and pike fishing that has made it outstanding during the past five years.

While hundreds of Pennsylvania fishermen have turned to using artificial lures for bass and other game fishes, many still prefer to use minnows and other forms of live bait. Fortunately for the game fish supply, however, our live bait fishermen are practising better conservation methods with the bait they use, a factor that should mean much to the future of our bass fishing.

In forage fish conservation, natural predators, of which the watersnake is outstanding, must today be considered. If through intensive campaigns by sportsmen and boys, the number of these reptiles can be reduced, an important step will have been taken toward the better fishing goal. More forage fishes in game fish areas, we believe, will be the result of effective watersnake control.

The 1936 Campaign

While many of our fishermen have been taking an active part in reducing the number of watersnakes on fishing waters, junior sportsmen, Boy Scouts and others, had a vital part in the Commission's drive last year and are expected to prove a major factor in this year's campaign. As a rule they spend a great deal of time on fishing waters during the summer months and therefore have more opportunity to find and kill watersnakes. They are usually adept with rock or club and in the past three years have destroyed many of these reptiles.

The Chief Threat of the Watersnake is to the Forage Fishes Such as the Golden Shiner

The Fish Commission is offering again this year a bronze medal, upon which is inscribed "Junior Conservationist," to boys (or girls) under 19 years old who qualify by killing ten or more watersnakes.

The following simple rules will govern the contest:

(1) Any Boy Scout who kills his quota of ten (10) watersnakes will report the killing and present the tails for confirmation to the scoutmaster in charge of his troop. In turn, the scoutmaster will notify the

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Lonergan Pure Streams Bill Opponents Are Answered

By Grover C. Ladner
Deputy Attorney General and President, Pennsylvania Federation of Sportsmen's Clubs

WITH sentiment throughout the country crystallizing rapidly in favor of Federal Control of Stream Pollution as provided by the Lonergan Pure Streams Bills, spokesmen of the polluting interests recently voiced their objections. They have an answer, a ringing, clean-cut challenge to those who would deny the people the right of pure water in the following summary of a reply brief filed by Hon. Grover C. Ladner, Deputy Attorney General and a leader in the movement to bring back pure streams to America. The summary follows:

Who the Opponents Are?

The opponents are principally the spokesmen of the polluters. They express largely the selfish viewpoint of those who put dollars above humanity. None of them expressed any views that could by any stretch of imagination be deemed disinterested. All of them commenced their argument by parading the amount of money invested in their respective industries and the amount of taxes paid by them. Each sought to influence the committee to find a verdict on the false ground that issue was a choice of industry or clean streams. By gross exaggeration and distortion of the facts they sought to develop the point that the passage of the bill meant the destruction of industry.

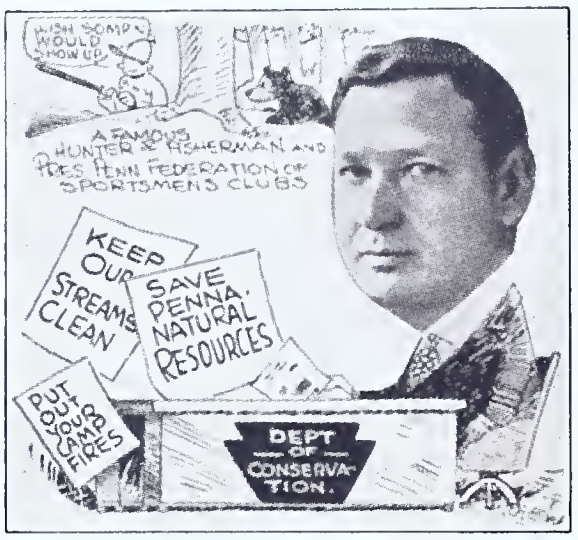
No such choice is necessary. Both industry and clean streams can thrive side by side as they do in the Rhine and Ruhr districts, as well as other rivers that flow through industrial Europe. The restoration of fish and recreational uses in the cleansed streams are but by-products, additional benefits that will follow when the waters are purified in the primary interest of public health and comfort. It is highly significant that the municipalities of the country have voiced no objection.

Pollution Has No Friends

The consciences of these spokesmen of the polluters were evidently silently accusing them, for scarcely without exception they gave "lip service" to the cause of pure streams. Some figuratively shed crocodile tears at the havoc they were wreaking on the waters of the nation and pretended to deplore the fact that they were unable to do otherwise. They may have salved their own consciences by this procedure, but merely being sorry for wrong done without joining wholeheartedly in a movement to remedy that wrong convicts them of insincerity.

The Proponents

In contrast to these selfish interests, the proponents of the Bill are all disinterested citizens who are fighting the battle of the ages to save our civilization and restore to the youth of the nation their God-given national heritage.



Scope of the Lonergan Bill

Illustrative of the exaggeration indulged in by the polluters' spokesmen is the argument that the Bill is so broad in its scope as to extend the jurisdiction of the Federal Government over the tiniest trickle of water in the land. The jurisdiction of the Federal Government is over the navigable waters of the country. These it may legislate to protect. As a necessary corollary of its right to protect the navigable waters, Congress must also have the power to legislate against pollution in a tributary thereof to the extent, but only to the extent, that the pollution is carried into and affects the navigable waters. The purpose of this "tiniest trickle argument" is evident. It seeks to arouse the States to oppose this Bill as an unwarranted invasion of their rights.

Is the Bill an Unwarranted Interference With State Affairs?

Somewhat similar is the argument voiced that the Bill is an unwarranted interference in the affairs of the States. We say the purpose of the Bill is plainly to cover a field in which the States are unable to act effectively. There is enough work to cleanse, safeguard and protect the non-navigable waters from the pollution evil to keep the State agencies busy for an indefinite time. In fact, much more work than the respective States are able to spend the necessary funds to do.

Praise for Present System

Some of the polluter spokesmen uttered words of praise for the present system of State pollution control. We may well beware of Greeks bearing gifts. Of course, the polluters prefer a system that has failed and leaves them undisturbed in their nefarious practices.

Cooperation vs. Law Enforcement

Some of the polluters' spokesmen pleaded for cooperation rather than enforcement legislation. In theory, cooperation sounds excellent. In practice, it does not and has not worked. For the last 20 years we have been talking about encouraging an intelligent self-interest on the part of the industry and solution of pollution problems by cooperation. Look at the waters today! Are they better or worse? Need we say more? Why talk of a system that has failed? Everything that is good in the cooperation plan is preserved in the Bill. The National Committee's and the District Board's first approach will, of course, be a request to the industries to cooperate in the movement to clean the watershed. Appeal to the courts under Section 9 will obviously be the last resort. We say, therefore, the industries that sincerely wish to cooperate, can still do so under this bill and those who won't, can be made to do so.

Power to Fix Standards of Purity

The polluter spokesman profess to fear the power of the National Committee to fix standards of purity for the respective watersheds. These fears are baseless. The watershed standards will only be fixed after a full investigation of the watershed problem, including conference with the polluters. The trouble, if any, judging from past experiences with Administrative Boards, will be that they will fix standards too low instead of too high, that they will probably move too slow rather than too fast. Much the same fear was expressed when the Interstate Commerce Commission was given power to fix rates. And when the Trade Commission was established.

The standards of purity must necessarily vary with the different watersheds to meet the different conditions thereof. The reason for this wise provision is hereinafter more fully discussed and explained in the answer to Mr. Abel Wolman's argument.

Are Further Investigations Needed?

Many of the polluter spokesmen pretended that further investigation is needed to solve the problems of the industries. If ever a subject has been investigated to death it is the question of stream pollution. What the public wants is action not talk: enforcement on polluters of a decent regard for public health and fellow man. Bureaucrats and experts love investigations. This insures perpetuation of their jobs and reports hurt no one. Polluters don't care how much public money is wasted on investigation so long as they are not interfered with. We have annexed hereto a detailed statement of the information now available from the many investigations heretofore made.

To the claim that a few industries have as yet unsolved problems, we say even if that is so, what is the sense of continuing to tolerate the polluting discharges of other

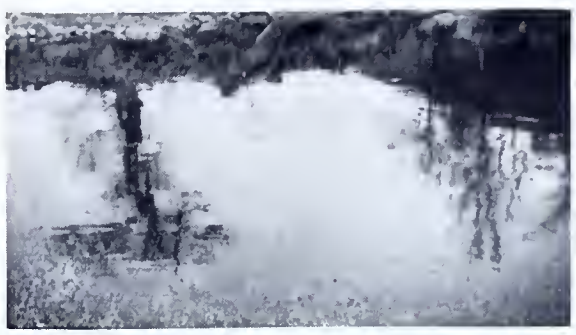
industries whose problems are solved. Logic and good sense dictate that if we relieve our navigable waters of the pollution that can be corrected, pollution of the few that cannot be treated will present no great problem in view of the natural ability of the water to digest a reasonable amount of impurities.

Excessive Costs

Attempt was made to scare the Committee by exaggeration as to probable cost of correcting stream pollution under the plan of this Bill.

We have shown that no reliable estimate exists of the cost of treating trade waste discharged directly into the waters. We say, bearing in mind the recovery of profitable by-products, the cost will probably not be more than that of handling domestic sewage problems. Whatever it be, however, will be passed on by the industries to the public in the cost of the manufactured products.

So far as sewage is concerned, the total costs will not be more than 500 million. If as contemplated, one-half be paid as a direct grant by the Federal Government this means only 250 millions. Spread over a five-year program it means only 50 million a year or about 2 cents per person of the population served.



Crooked Creek in Tioga County Was Polluted Recently

We have spent far more for less worthy improvements.

Interstate Compacts

Suggestion has been made that Interstate Compacts will afford a better means of control of pollution of navigable waters. We have as yet no experience to warrant this claim. We know that these compacts are difficult to put through. The only one in existence took five years to consummate and covers a very limited area. Many others have failed in negotiation.

We think the recommendation of the compact method is not sincere. When the question of actively supporting a compact was put to the spokesman of the National Association of Manufacturers he backed quickly away from it. The compact plan is bound to develop many difficulties, since it is a treaty of States confirmed by Congress. Once entered into it is binding and no one of a group of States can withdraw without the consent of all of the others. Amendments or changes can only be obtained by the same laborious negotiations through which the original compact was entered into. Far superior is the Federal Control Plan under which imperfections that develop or changes that may be desirable, can be made at any session of Congress.

The financial question will likewise be one of great difficulty. No compact will give the Compact Board authority to levy taxes, for that would be consenting to the erection of a super-State or separate sovereignty. The work will, therefore, have to depend on voluntary appropriations by the States concerned. But if one State fails to appropriate its share of the funds, what then? No compulsion is possible and the result will be that the other States will refuse to bear the whole burden. The Compact Board will then be without means to carry on and failure will be inevitable.

Any States that prefer a Compact Board may, nevertheless, erect one under the Lonergan Bill, and one so erected will have the powers of the District Board, with such additional powers as the compact may give, and its financial problems solved.

Carp Fishing Contest Arouses Keen Interest

The members of the Mount Carmel Game and Fish Protective Association are eager to prove their piscatorial ability in landing record size carp, since the association has offered a casting rod and a casting reel as first prize for the largest carp caught with hook and line.

Joseph Yeager, the financial secretary of the association, and one of the most ardent carp fishing enthusiasts in the region, is holding top position with a catch that consisted of two silver carp and seven German carp. The two silver carp measured 12 and 13 inches and the German carp were 18, 22, 24, 26, 31, 35 and 35½ inches in length. The largest fish of this group tipped the scales at 23½ pounds, which gives the contestants a real mark to shoot at. These fish were on exhibition in a specially constructed tank which is assembled in one of the display windows of the association's quarters. A picture of Joe with two prize carp is shown on this page, one of the display windows in the background. These fish were caught in the North Branch of the Susquehanna River, between Danville and Northumberland.

The battle for carp fishing supremacy is on in this region, with Joe holding the lead. Charles Neiswender, the club steward, and John Radzai are close seconds. Stanley Patricoski, the invalid war veteran who made a carp fishing record in 1934, is watchfully waiting for the waters of his favorite fishing hole to recede to the proper carp fishing level, so as to enter the contest and match his ability with other carp fishermen.

John Baker and Lamar Davis, local carp fishing experts, are of the opinion that the prize winning carp will be pulled out of their favorite fishing hole in Middle Creek, between Kramer and Selinsgrove; others are of the opinion that Penns Creek will produce the winner, especially Halfpenny Dam and the New Berlin Dam. Then there are veterans who claim that the Kratzerville and Samson dams are filled with carp of all sizes. Well, time will tell and may the best man win.

KILLS 17 WATERSNAKES DURING DAY'S HUNT

Staging a one-day watersnake hunt with a .22 calibre rifle early in May, Robert Goshorn of Richvale in Juniata county made a notable kill of these reptiles, according to Warden C. V. Long of East Waterford. Of the seventeen snakes killed, examination revealed that 10 of them had fish in their stomachs. Most of these fish were identified as minnows, including shiners and run chubs. One watersnake was found to contain five fish.

FIND BIG MUSKELLUNGE DEAD IN CONNEAUT

Special Warden Gerald Munson recently reported the finding of a 39-pound, 54-inch muskellunge in Conneaut Lake, which each year produces catches of these "water tigers."

The big fish was found by two perch fishermen. One hole in the head and another larger wound below would indicate that the muskie had either been killed by the propeller of a motorboat or a rifle bullet. The fish was a female just ready to spawn.

"Want Good Fishing?— Instruct Some Boy!"

By Ray. F. Henrie

"Would you give your fancy tackle
For a nice long willow pole,"—
Anon.

MAY the good Lord forbid that I should try to defile the sacred memories of my boyhood days or infringe upon the rights of the present and more modern juvenile Waltonian. I feel like a traitor to both, but the truth will out and must eventually be faced.

Even though I read with zeal and hope of the nearby streams, creeks and lakes, stocked with bass, pickeral and trout, I venture forth each season with renewed faith only to return disappointed and wondering what had happened to all those fish that were stocked.

The answer came one day last summer, while fishing a beautiful stretch of the Manatawny creek.

I was wading and casting a streamer fly and a small spinner with a fly rod. Every likely spot was thoroughly canvassed. I worked deep holes till my patience was nearly exhausted, I cramped myself up like an acrobat to get my lure under overhanging bushes and trees, changed flies and cast close and afar. A total of twenty-two undersize bass was my reward. Yes, they had just stocked this creek, but where were last year's bass?

My question was partially answered a little further down the stream where one of the few bridges cross the creek. There were five excited youngsters on the bridge. all intent upon the serious business of catching fish.

"Whece! I got another one," a little fellow yelled, "that makes ten for me." He quickly jerked his prize upon the bridge, disengaged the hook and threaded it on a long line which dangled in the water.

A few more steps and I could see what all the excitement was about.

"Hi-ya kids!" I said friendly like, "What ya catchin'?"

"Sunnies," they returned in chorus, "And are they bitin'."

"Look!" the biggest one said as he proudly exhibited their catch.

"Boys," I said in as impressive a voice as I could muster under the circumstances, "do you know what kind of fish you are catching?"

"Sure,—Sunnies."

"Nope, you're wrong kids. They're little bass." And I promptly merged into a lengthy discussion on the requirements of a good sportsman and fisherman, and by the time I got to the part where a big bad policeman gets after all little boys as well as grown-ups for keeping little fish, they were gather-up their poles and lines in preparation of a hasty retreat.

As I watched them hurrying down the dusty road my thoughts went back to the time when I did the same things I had admonished these youngsters for doing. Of course it was ignorance on their part, the idea of breaking the law was remote from

The Writer With a Nice Wall-Eyed Pike

their minds. I felt a trifle guilty, thinking that I had spoiled their fun.

Then I thought,—well this is only one stream. How many youngsters fish this stream every day? How many young bass are killed in this innocent manner? Here were five boys with a total of thirty young bass on one stream. Certainly there were other boys fishing somewhere on this same creek, the same day. A very conservative estimate would be ten small boys fishing one stream in one day. If each one caught six small bass, that would be sixty bass a day or 1800 bass a month. There are three bass streams in this neighborhood, with a possibility of small boys taking 5400 small bass a month. It stands to reason, the stocked bass would not last long at this rate.

What is the solution? Prohibit our youth from the pleasures of angling? Not on your life. Such a thing would be preposterous and wrong. What boy has not profited by the lessons of the willow pole era? The love of the outdoors, the opportunity for meditation and reflection, the art of winning and losing, the joy of companionship and the appreciation of the rights of others.

The Izaak Walton League is doing wonderful work along the lines of educating and instructing the younger anglers, through their Junior Walton League. They should encourage and induce every angling minded youngster to join. The dues should be so low that they can afford to join and learn.

Let every angler take unto himself a protege and make it a point to educate him and instruct him in ethical sportsmanship. Let's instigate an extensive "INSTRŪCT SOME BOY" program.

In addition to Pennsylvania's "Want Good Fishing?—Obey the Law" slogan, we might say,—"Want Good Fishing?—Instruct some Boy."

LONERGAN POLLUTION BILL WILL AID PENNSYLVANIA

On June 5, 1936, the Lonergan Federal Control of Stream Pollution Bill, Senate Bill 3958, was reported out favorably by the Senate Committee on Commerce upon recommendation of the sub-committee conducting the hearing, consisting of Senators Guffey, Caraway and Gibson.

This bill will be of great assistance to the State of Pennsylvania in ending the evil of stream pollution so far as the navigable waters of the State are concerned.

By this bill, the National Resources Committee is empowered to cooperate with the appropriate agencies of the several states with a view of coordinating the activities of the several states relating to the prevention and abatement of stream pollution, to encourage enactment of uniform state laws on this subject, to encourage compacts between the states for prevention and abatement of water pollution and to make studies, surveys and experiments and to devise methods for preventive and corrective measures.

To this end, the committee is authorized to collect and disseminate information, make the same available to state agencies, to assign experts to assist these agencies and to make and arrange loans for the construction of sewage disposal plants or trade waste treatment works.

The National Committee is directed, as soon as practical, to classify the navigable waters of the country into Sanitary Water Board Districts conforming to the interstate watershed areas.

The committee is authorized to fix standards of purity in each district for the navigable waters therein.

The National Committee is authorized, when these districts are established, to appoint in each district a District Board to be selected from the bona fide residents of the district. Where compact ageneies or boards exist, such compact agency may be designated the District Board of that area.

The bill makes it the duty of these District Boards to prevent the pollution of waters within the district by voluntary methods, if practical, to recommend to the National Committee loans or grants for the construction of sewage disposal plants and trade waste treatment works within their district, and, if voluntary means fail, to institute proceedings for prevention and abatement of water pollution.

A most important feature of the act is Section 8, under which the National Committee, under recommendation of the District Board, may make loans or grants, or both, to states or subdivisions or municipalities thereof, or to make loans to corporations or persons for the construction, enlargement or improvement of sewage disposal plants and trade waste treatment works.

The bill further declares the pollution of the navigable waters of the nation as therein defined, and in violation of the regulations promulgated by the committee, to be a pub-

lic and common nuisance, and authorizes an action to abate the same to be brought by the United States Attorney in the United States District Court, upon request of the National Committee or District Board.

Under this bill, the growing evil of stream pollution in the navigable waters of the nation is attacked uniformly throughout the country. All of the knowledge on the subject of methods of prevention and abatement are gathered in one place. Experts are made available to counsel and assist the state agencies in their work to guard and protect the intra-state streams. Voluntary cooperation of industry and municipalities is made possible, and, at the same time. means are afforded to compel recalcitrant polluters to recognize their public duty.

Finally, means are afforded by which the request of the District Boards can be obeyed. This is in the form of outright grants to municipalities and part loans; and to private industries and corporations, loans to be repaid upon an amortization basis.

In order that Pennsylvania's municipalities can reap the full advantage of this bill, the resolution introduced by the Administration to amend the debt limit section of the Constitution, Section 8, Article IX, by adding at the end thereof the proviso that any municipality may increase its indebtedness to the extent of 3% over and above any limitation fixed therein toward the sole purpose of constructing or completing sewage treatment works, becomes extremely important.

The grants by the Federal Government under the Lonergan Bill will undoubtedly be conditioned upon the municipality bearing a fair share of the sewage disposal works. If this amendment of the Constitution is passed at this Special Session of the Legislature, and again passed at the General Session of 1937, by the time the Lonergan Bill is law, the State Constitution can be amended so as to enable municipalities of the State to take full advantage of the loan and grant provision of the Lonergan Bill.

Senator Lonergan, who introduced the bill, and Senator Guffey, who was a member of the sub-committee, conducting the hearings, are entitled to great credit and the thanks of the decent citizens toward advancing this constructive measure.

Deputy Attorney General Ladner collaborated in the preparation of the bill, argued and filed a brief in support thereof.

HUNTINGDON SPORTSMEN START WATERSNAKE DRIVE

Determined to improve fishing conditions in Huntingdon county trout and bass waters, the Huntingdon County Game, Fish and Forestry Association recently announced a watersnake contest in which boys and girls under 18 years of age may compete. In addition to attractive prizes for the largest number of watersnakes killed, the Association will pay three cents for each watersnake turned in. Following are the rules in the contest:

1. Contest will open June 13 and close July 31, both dates inclusive.

2. All boys and girls in the county eighteen (18) years of age or under are eligible to participate.

3. Snakes must be turned in to authorized checkers not later than midnight, July 31.

The Association will pay a bounty of three (3) cents on each snake turned in and in addition will award the following prizes:

To the boy or girl killing the greatest number of snakes:

1st—Telescope Rod Complete with Level Wind Reel.

2nd—Scout Knife

3rd—Flash Light

These sportsmen in various sections of Huntingdon county will check on results in the snake kill:

Walter Corcelius, Huntingdon, Joseph Rumberger, Huntingdon, Fred B. Mark, Huntingdon, Miles Shenefelt, Smithfield, R. L. Brumbaugh, Marklesburg, Robert Patterson, Dudley, G. B. Isett, Six Mile Run, Gene Kyper, McConnelstown, Hullar Isenberg, Alexandria, Carl Goodman, Water Street, T. E. Huston, Petersburg, Charles Bonnie, Neff's Mills, W. H. Miller, McAlevy's Fort, Rollo Goodman, Mill Creek, D. C. Goodman, Mt. Union, W. H. Andrews, Mapleton Depot, Lawrence Bard, Shirleysburg, N. L. Eberly, Three Springs, L. M. Green, Cassville, S. H. Price, Shade Gap, Homer Wear, Orbisonia, Porter Cox, Warriors Mark, and Sidney Mogle, Spruce Creek.

Lehigh Sportsmen Open Boys' Fishing Pool

George Zimmerman (fourth from left) and Joe Young, (second from left) check on First Day

Enjoined by O. M. Deibler, Commissioner of Fisheries, to borrow a boy if you don't have one, the Lehigh County Fish and Game Protective Association is carrying out the commendable suggestion on a wholesale scale at what is known as Union Terrace pool on the outskirts of Allentown, where twice a week the city's youngsters are enjoying real angling as guests of the Lehigh sportsmen's association.

The pool, approximately 300 by 400 feet in dimensions, was created a few years ago when the city, with the aid of federal government funds, established an open air theatre at Twentieth and Union streets, and utilized a lot of spare room for the construction of the pool, the water for which is furnished by Cedar Creek, one of the finest trout streams in eastern Pennsylvania.

Last fall, Fish Warden C. Joel Young, of Lehigh county, and George Zimmerman, secretary of the Lehigh sportsmen's organization, conceived the idea of devoting the pool to a fishing paradise for juveniles, and the suggestion was immediately approved by the members of their association, and promptly received promise of the cooperation of the state's dispensers of fish, resulting in the stocking of the pond with large consignments of yellow perch, catfish and sunfish, all of large size.

Limiting the fishermen to boys and girls under the license age of 16, the pool was opened to the anglers on Saturday, June 6, when nearly 500 kids responded to the invitation and enjoyed six hours of sport with tackle that ranged from father's best fly rod to the traditional stick. The catch of fish on the opening day was about 150 and about half as large on the second day when the number of fishermen was materially reduced by unfavorable weather conditions.

Under the rules, the pond will be open to fishing for juveniles under 16 years Wednesdays and Saturdays during July and August from 10 A. M. to 4 P. M. The creel limit for the day is five of the combined species. All fishing must be from the banks and adults are not only not allowed to fish but are prohibited from assisting the youngsters.

LEHIGH SPORTSMEN PLAN BIG OUTING

The third annual outing of the Lehigh County Fish and Game Protective Association will be held at Dorney Park, Allentown, on Saturday, July 25, according to a recent announcement. This is one of the outstanding sportsmen's events in southeastern Pennsylvania, and is keenly enjoyed by fishermen, hunters and their families.

An increasingly popular feature is the live fish contest, in which fly fishermen will vie in taking 800 big trout, ranging length from 12 to 25 inches. Other events scheduled are a fly casting contest, water boiling contest and balloon shooting contest. The fly casting contest will be in two divisions, one for distance and one for accuracy. This contest will start at 11 o'clock, eastern daylight saving time.

The Association urges guests to bring their fly rods, not forgetting their fishing licenses.

Following are the rules governing the live trout contest:

Live fish contest starts at 1 o'clock E.D.S.T.

All contestants must be registered at booth located near scooter boats.

All contestants for the live fish contest must be members of the Lehigh County Fish and Game Protective Asso. and must show a 1935 membership card.

Entrance fee for live fish contest 25c each entry. Contestants can enter as often as desired by paying 25c each time, but cannot enter in succession.

Ten minutes will be allowed to fish; artificial lures only with barbless hooks.

Fish must be landed into landing net before it is scored.

Fish can not be beached and no one can assist in landing fish.

First fish caught each time entered is property of contestant.

First prize $5.00 for largest fish caught and landed.

Second prize $2.50 for most fish caught in ten minutes. Each time a contestant enters they can use highest score in ten minutes.

Contestant must reenter each time for a 10 minute period.

All contestants in live fish contest must have their lawful fishing license displayed.

Contestants must draw for fishing position, when registering.

Junior and women members invited.

H. R. Stackhouse, Commission Secretary, Tries His Luck for Trout on a Stream in the Poconos

Huntingdon County Sportsmen Hold Get-together at Spring Creek Project. In Group, front row, left to right—Herb Watts, Jack Strickler, Don Kyper, Sammy Metz, Fred Marks; Top row, left to right—Maurice Banker, Howard Shilling, the Editor, Jim Kyper and Ross Metz.

QUARRY HOLE YIELDS HORDES OF SHINERS

Barring the presence of carnivorous species of fishes such the bass or pickerel, how rapidly will silver shiners, chubs and golden shiners increase in a body of water during, say, five years? That question was answered in an amazing manner early in June when the Fish Commission sent its representatives to remove fish from the quarry owned by H. E. Millard and located near Hershey in Dauphin County. The owner and the Hershey Chocolate Company rendered valuable assistance in transferring the fish from the quarry to the Swatara Creek, one of the up-and-coming bass streams in Central Pennsylvania. Not more than one-quarter of the fish present were removed during the first day's netting.

One day's netting, directed by Warden Frank Sanda, of Steelton, produced 25,000 silver shiners, golden shiners and chubs from the quarry hole. Originally having a depth of 60 feet, pumps installed by the quarry company had reduced the depth to approximately two and one-half feet. The minnows literally swarmed in the pool, one scoop of a six-foot minnow seine used as auxiliary to the big seine yielding a mass of these forage fishes. All were in splendid condition when released in the Swatara. Many of the shiners were six and seven inches in length, although the majority were from two to four inches, and should serve as valuable forage for bass in the Swatara.

In addition to the forage fish, only two other species were found to be present, two suckers, one of which would have weighed possibly three pounds, and two rock bass, the largest about nine inches in length.

SURFACE LURES FOR BASS

(Continued from Page 5)

are made to appear as natural as possible. This is true of the mouse and frog creation and possibly the lure which represents the dragon fly. The lures which are shown here will give a general idea of some of the types of surface lures which are very successful today.

First there is the "Bass Bugger" which is a real bass getter and should be allowed to float perfectly natural for the greater part of the fishing. Little motion should be given and is all that is required. It has proved very successful to many fishermen and will stand up well under hard use. The "Spent Wing Bugger" somewhat resembles the dragon fly and, if the hass fishermen will closely observe what takes place when bass are feeding on them, he will see that there is a little movement on the water. This movement on the water may be made by the fisherman by a little care and will produce many strikes. On faster water it will be rather unnecessary. The "Hair Wiggler" is so constructed that the little metal plate, suspended on the bottom just below the front, can be adjusted to suit the fisherman. It will then dip deep or shallow in the water and make quite a commotion and is very effective for largemouth bass. Just a little flick of the tip of the rod will make it do queer things that will attract the bass. The "Frog," of course, represents a frog very closely and it is common knowledge that frogs are good bass bait. In using this lure, it is well to give it motion on the water as if the frog were swimming. This motion should be made by slight flicks of the rod, hesitating momentarily, then continuing until a strike is secured or the lure is ready to be cast agaln. It is so constructed that the legs may be set so they will move almost like a live frog on the water as the motion is given with the rod. The "Mouse" should be kept in motion after the cast and is a real bait in early morning or evening or just after dark. As a mouse is a slow swimmer and makes very little commotion on the water, it is well to retrieve this lure very slowly so that there will be just a slight wake following the lure. This is very effective in deeper water.

If the fisherman will just spend a little time and patience in making observations on the streams at all times he will learn many things that will do him no harm when it comes to actual fishing with surface lures. I am sure he will have little difficulty in spending many a day astream and will in time be able to assist his brother sportsman in many respects to enjoy many hours of real sport with the popular surface lure.

FISHING CONTEST

A silver loving cup will be awarded hy the North Boroughs Sportsmen's Association to the member catching the largest black bass on or between July 1 and November 30, 1936, in Pennsylvania waters. Contestants must make affidavit stating where caught, date, dimensions, and weight before a notary public and mail same to A. Menzemer, 173 N. Fremont St., Bellevue, Pa., on or before December 8, 1936.

WATERSNAKE CONTROL

(Continued from Page 7)

Fish Commission and the boy will be awarded a medal.

(2) In the event that a boy is not a member of a Scout troop, he will be awarded a medal if he reports the killing of ten (10) watersnakes and turns in the tails to a fish warden, game warden or official of a sportsmen's organization.

(3) To be entered in the total of watersnakes killed. a snake must be twelve (12) inches in length.

Organized sportsmen in various sections of the state have also organized watersnake killing contests, and it is anticipated that this year definite progress will be made in reducing the number of these destructive reptiles on our Pennsylvania fishing waters.

KISHACOQUILLAS SPORTSMEN ELECT WILSON PRESIDENT

Walter B. Wilson of Lake Park, Lewistown, was elected president of the Kishacoquillas Valley Sportsmen's Association at the annual election of officers held June 15 at a meeting at Greenwood Furnace attended by about 25 members of the Association.

Other officers elected with Mr. Wilson were Roger Sweigart of Belleville, treasurer; and J. F. Morgan of Lewistown secretary.

Immediately upon acceptance of his office, Mr. Wilson appointed a membership committee consisting of W. M. Sweigart of Belleville, Richard Rodgers of Lewistown and Clare Swigart of McVeytown. The appointment of the committee indicates that a determined drive will be made for new members. The association is the only active sportsmen's group in the county and stands as a safeguard of the sportsmen's rights and for the best interests of the wild life of the field and forest and the streams.

A ham and egg supper was provided the members previous to whlch they engaged in horseshoes and target shooting.

Rev. Guy Middlesworth of Belleville, retiring president, presided at the meeting during the business session and the election of officers.

William J. Davis, district game supervisor, spoke to the gathering on several proposals made the Game Commission relative to a split season or division of the State for the hunting seasons.

In answer to this following a discussion of the conditions, the Kishacoquillas Valley group went on record as opposing both a division of the State and a split season. The reason for opposition is that a division of the State would load one district up with hunters from other districts much in the same fashion as the doe season experienced.

Mr. Davis recommended that the sportsmen organize and voice their opinions in order to provide the Game Commission with their views on matters of that nature.

The association commended the commission for its latest turkey propagation experiment.

Plans for vermin control also were undertaken by the association with the appointment of Red and Blue teams which will undertake a contest. The Red team is headed by Oscar Cupp of Lewistown and the Blue by Dr. H. E. Miller of Belleville.

'Bout all a feller'd hear about the store last month when it come ter fishin' was bass, an' I reckon there ain't many fishermen around these parts thet wasn't on the big crick when the openin' came on the first o' this month. Heard o' some right nice ketches, too, an' Jim Toby he ketched a big bass at the rock hole thet weighed jest one ounce short o' five pounds. I did right good, too, landin' about eight hass from 10 ter 15 inches. Only kept three o' them, an' it was all we could eat at home.

The water was jest a little milky as there hed been a thunder squall the night afore up the valley. Thet suited me fine, fer when it comes ter bass fishin' give me some nice lively helgramites an' I'm all set. Seems bass go fer stone catties harder too when the crick's a bit riled, an' I got it figgered this way. Enny feller knows thet catties, an' fer thet matter helgramites llkewise is more apt ter be movin' when they's a raise in the crick. It's more like these baits ter be movin' when the water's murky an' I figger thet's when a feller kin hev the best luck with 'em.

Some fellers hook a helgramite in the collar on the back, but fer my fishln' I reckon I got a better way. I hook 'em light through the folds on the belly about halfway back. Thet way they do plenty kickin', an' when a bass takes hold fer its first run, a feller don't miss often an' hooks the fish lighter. Ef ye ever sees bass nosin' round close ter bottom, ye kin right often figger thet they're feedin' on helgramites er crabs. Ef a bass starts its first run with a helgramite, ye don't often hev ter wait long ter set the hook. I allus wait till the second run with a cattie, fer a bass stops an' turns the stone roller fer swallerin' afore it starts its second run.

An effort will be made to have sportsmen enlist in either one of the two teams.

In connection with the vermin control program, E. L. Alexander of Belleville, refuge keeper, was appointed to head a Juvenile Sportsmen's Water Snake Contest open to all boys under 16 years of age. Every boy who kills 10 water snakes can take his kill to any member of the association and at the end of the season he will receive a medal.

Fishes of Pennsylvania

By C. R. BULLER

Artificial Propagation

Conclusion

IN recognition of the economic value of fish, both from the standpoint of food and of recreation, the Federal Government, many of the States, and a number of the foreign countries, have appointed commissions for the study of problems connected with the fisheries and for their better regulation. This has become necessary because of the drain put upon this food supply by modern civilization.

In Pennsylvania, all matters pertaining to fish and fishing come under the jurisdiction of a Board of Fish Commissioners, composed of a president, or chief executive, known as the Commissioner of Fisheries, and seven other citizens, known as Fish Commissioners, whose headquarters are Harrisburg, Pennsylvania.

One of the many duties of this Board is the establishment and the maintenance of institutions known as fish hatcheries. At these institutions fish are artificially hatched and reared for liberating in our public waters. This is done to help offset the checks upon their natural growth and their reproduction by civilization.

In about 1873 Pennsylvania established its first fish hatchery at Donegal Springs, Lancaster County, Pennsylvania. At this time, fish culture was only in its experimental stage; but from this small experimental station, through the efforts of practical men who have chosen as their life's work the fish cultural problems of Pennsylvania, ten modern fish hatcheries have evolved. Through the efforts of men such as these, in this short period, wonderful progress has been made in the artificial propagation and rearing of fish, as well as in the transportation of fish and of eggs, until at the present time, the artificial propagation of many species is no longer in the experimental stage.

Today, the fish hatcheries of Pennsylvania are much more than the name implies, and could rightly be called fish farms. In the early days of these institutions they were simply fish hatcheries, as the eggs were collected from the wild fish, artificially hatched at the hatcheries, and the very young fish released in the streams or the lakes. This is not the case today. The egg crop, with the exception of the eggs obtained from the food fish of Lake Erie and the pike perch of our inland waters, is obtained from brood fish kept at the hatcheries for this purpose; and most of the fish are reared to a size which enables them to take care of themselves when released in the public waters. The rearing of fish to a larger size naturally necessitated the reconstruction and the enlargement of the hatcheries, and the size of the fish released has gradually increased until in some species, it is the legal catching size.

In the early days of the hatcheries, the planting of baby fish was a necessity, as no way was known for holding great numbers of these babies in captivity for any length of time. Probably, much good was done by releasing fish of a small size, as in those days many of our streams and our lakes were in a more or less natural state and could well act as nursery sites for the baby fish; but in recent years, through industries and through too much fishing, conditions have become such that our public waters can no longer act as nurseries. For the results desired, the fish must be reared artificially at the hatcheries until they are of an age at which they have a fighting chance against the many existing unnatural conditions. At the hatcheries in Pennsylvania are propagated practically all species of food fish and game fish of worthwhile qualities that are found in our public waters, together with a number of forage fish. The food fish and the game fish are brook trout, brown trout, rainbow trout, black bass, sunfish, pike perch, catfish, suckers, yellow perch, blue pike, white fish and cisco. The forage fish reared are a number of species of minnows.

For convenience, these fish are classed in two groups, cold-water species, which are the fish commonly found in our cold mountain streams as the brook and the brown trout; and the warm-water species, or those found in our lakes, our larger streams and our rivers.

The hatchery superintendents, or the men in charge of the fish hatcheries, must be very keen observers of nature, because no two of the many different species hatched and reared at these plants can be handled alike. This means that for the successful operation of the hatcheries, the men must be well-informed as to the habits of each species with reference to how they live, reproduce, and feed when living under natural conditions.

In the artificial rearing of fish, nature is imitated as much as possible. As an example, fish, such as the bullhead, that are by choice fish from ponds having soft, muddy bottoms, when in the wild state, are placed in ponds of this character at the hatcheries. Fish, like the trout, requiring an abundant flow of cool spring water in their natural habitat, must be surrounded by the same conditions when artificially reared.

This also holds true with the artificial incubation of the eggs. Fish eggs that require a wave movement for their well-being when hatched naturally, must be given practically the same motion when hatched artificially. Those requiring no movement must be permitted to remain quiet in the artificial hatching devices. Thus it can be seen that if the men in charge were not perfectly familiar with the habits of the wild fish, they could not successfully imitate their mode of life under artificial conditions.

Methods Used in Securing the Fish Eggs: The brood fish with the exception of a few species, are confined in artificial ponds, year after year, for the purpose of producing the all-important egg supply. The size and the type of pond used for retaining the parent fish depend much upon the species with reference to their natural habits.

The parent trout are retained in ponds of comparatively small area, from one quarter of an acre to one and one-half acres, and are given an abundant supply of cool spring water. Many of the warm-water fishes require a much larger range where conditions are more natural and, consequently, more to their liking. This is particularly true of the black bass and the yellow perch. The ponds where these brood fish are retained range in area from one and one-half acres to one hundred acres.

The only fish of our inland waters propagated at the hatcheries, the brood fish of which are not kept under artificial conditions, are the pike perch. For the well-being of these voracious fish, a very large range of feeding ground and an abundant supply of their natural food are required. The range must be much larger than that which would be practical to maintain at most fish hatcheries; for this reason, the eggs are collected from the wild fish, and then are artificially hatched at the hatcheries.

The eggs from our Lake Erie commercial food fish are also obtained from the wild fish. This is done as a strictly conservation measure. If the methods employed for the collection of the eggs were not used, millions upon millions of the unfertile eggs would be thrown away with the waste portions of the fish when they are dressed for the market. The following will show why this is so:

The commercial fishermen, moving in upon the spawning beds, make their important catches when the fish are collected in great schools. The capture is made before the fish have an opportunity to spawn. By capturing these fish in such great numbers before reproduction takes place, we are interfering with the great natural law of the propagation of the species. To eliminate the waste of this food supply, the Board of Fish Commissioners details men known as spawntakers to go on the fishing boats with the fishermen.

It is the duty of these men to take the eggs from the female as the fish are brought on board from the nets, before they die or are killed by the commercial fishermen, and fertilize them. When the boat reaches the dock, the eggs are taken to the hatcheries where they are artificially hatched. Later the baby fish are released in the open waters where a large portion of them survive. Thus the commercial fishing industry is preserved.

Fish eggs for artificial incubation are secured by different methods, depending upon the species. The method of artificial extrusion and fertilization is used in securing the eggs of brook trout, brown trout, pike perch, white fish, cisco, blue pike, and several kinds of minnows. The brood fish are confined at the hatcheries, and at the approach of and during the spawning season, the females are examined every few days to determine their condition as to ripeness, or in other words, to find out if they are ready to give forth their eggs. This condition is told by the sense of touch of the attendants. Generally, when fish are ready to give forth their eggs, their abdominal walls will be soft and pliable to the touch. When they are in this condition, the eggs are squeezed from them by exerting with the hands a gentle pressure, beginning well forward and moving along the ventral surface towards the tail.

After the eggs have been extruded from the female, by manipulating the male in the same manner, the milt is poured over the eggs. When the milt or spermatozoa come in contact with the eggs, fertilization takes place. The fertilized ova are then transferred to the artificial hatching devices or incubators.

Artificial extrusion of the eggs of some species of fish is not practical. When this is the case, as with the yellow perch, the parent fish are permitted to deposit their eggs in the natural way on artificially constructed spawning beds. The eggs are then collected from these beds and are transferred to the artificial hatching devices.

In the case of some species of fish, as the sunfish and the bass, neither the artificial extrusion, nor the collection of the eggs from the spawning beds is practical. This is because of the peculiar spawning habits of these species and of the adhesive or sticky quality of the eggs. When this is the case, at the approach of spawning, the parent fish are confined in ponds where the conditions can be made as natural as possible for their reproduction. The parents are then permitted to build their homes or nests, to deposit their eggs therein, and to care for them and the very young fish in their own way. When the fry or the baby fish no longer require the parental protection, the adult and the young are separated and the babies are put into nursery ponds where they can receive the food and the attention they require.

Artificial Methods Used in Hatching the Eggs: At the hatcheries the eggs are hatched by either of two methods. The battery method is used to hatch fish eggs that require motion, like the eggs of the yellow perch, the pike perch, the white fish, the cisco, the blue pike, and of a few species of minnows. The trough method is used where the eggs require very little, if any, movement. This method is necessary for the hatching of the brook, brown and rainbow trout.

In the above paragraphs, I have frequently alluded to the artificial hatching devices as incubators. To the practical fish culturist they are known by this term, but are called the hatching battery and the hatching troughs. By the use of the term incubator, the reader must not conceive the idea that any artificial heat is used. The water in both systems is of its natural temperature.

A hatching battery consists of a number of parallel troughs placed one above the other with an intervening space of about four inches between each trough. The troughs are arranged in tiers, the height and the length depending upon the number of jars to be used. While the battery is in use, water is kept running through the series. The water intake is at one end of the top trough and flows from one trough to the other until the bottom trough is reached; thence the water is conducted into the fish storage tanks. About every twelve inches in the series of troughs, a one-half inch spigot is placed. Below each spigot and resting on the next trough is a small shelf. On this shelf directly under each spigot is placed a glass hatching jar.

The hatching jar is a cylindrical glass jar fourteen inches high and six inches in diameter. The bottom of the jar is rounded in such a manner that the water striking the center of the bottom is distributed equally in all directions in an upward current.

The overflow is at the top of the jar and the water is fed through an inserted glass tube extending from the spigot to within about one-half inch of the bottom. By this arrangement, when the eggs are placed in these containers, the upward lift of the water has a tendency to keep the eggs in a constant rolling motion. The battery process is simply an imitation of nature's way of caring for the eggs, the commotion in the jar replacing the wave action in the lake or pond.

The hatching troughs consist of a series of troughs fourteen feet long, eighteen inches wide, and eight inches deep with a depth of approximately four inches of water in each trough. The eggs are placed on wire trays and are submerged to a depth of several inches in the troughs of running water. This is again an imitation of nature's way of caring for the eggs that require very little, if any movement.

The Care of the Eggs and the Fish: During the period of incubation, fish eggs go through a number of stages of development which can plainly be seen with the unaided eye. For practical purposes, the fish culturist divided the periods of development into three stages, of which the first is the green stage. This is the period when no trace of life can be noticed. The second period is termed the tenderest age and is the time when the first faint form of the baby fish can be seen within the translucent shell. The third is the eyed stage when the distinct outline of the baby fish is plainly visible.

A number of different stages of the development of the brook trout egg can be seen by referring to the cut on the opposite page.

All during the period of incubation the eggs require the constant attention of trained men. The unfertile eggs, which turn white from time to time, must be frequently removed to prevent contaminating the mass of good eggs. Excessive sediment must be removed to prevent smothering. When using the battery system, care must be taken to keep every egg in constant motion, and yet to guard against a motion that would be too rapid and would result in injury to the egg. In the trough system, at certain stages of development, the position of the eggs must be changed, from time to time, to promote the healthy growth of the embryo.

During the period at which the fish are at the hatchery, they must have the same constant care as that given the eggs. The water supply must be regulated in volume according to the kind of fish contained in the pond. To prevent disease, conditions must be kept sanitary. This is done by frequently removing all foreign matter and dead fish, and at intervals the ponds are cleaned and sterilized. The fish must be given the kind of food best adapted for the well being of each species, and generally for the success of the artificial propagation and rearing of the warm water species, the environment must be made as natural as possible.

When the baby fish first break from the shells of the eggs, they have attached to the

Eyed Rainbow Trout Egg

lower portions of their bodies umbilical or food sacs. These sacs furnish the baby fish with food for a short period. The length of time they are nourished from the food sac depends upon the kind of fish and to some extent upon the temperature of the water. After the sac is absorbed, or very nearly so, these delicate creatures must be furnished other nourishment.

In some species like the trout and the catfish, the first food in this early feeding stage consists of finely crushed sheep's liver and of clabbered cow's milk. Other fish, because they are too small to consume any artificial food, or because it does not meet with their requirements, in the early feeding stage, subsist on plankton. Planktonic foods are required for the well-being of such fish as the baby pike perch, the baby sunfish, and the baby bass.

When the diet is changed to the food of the adults, not all fish can be fed upon the same food. The principal food of trout, sunfish, bass, yellow perch, and catfish during their stay at the hatchery is meat. The meat used for this purpose consists generally of the heart, the liver, and the lights of the sheep. It is chopped or ground into fine particles, the size depending upon the kind and the size of the fish consuming it.

How Fish are Transported to the Public Waters: The length of time fish are retained at the hatcheries before they are released in the public waters depends a great deal upon the species, but generally such fish as the bass, the sunfish, the catfish, and a portion of the yellow perch are retained until they are from one and one-half to six inches long. All trout are retained until they are over four inches in length, and many of them until they are over the legal catching size of six inches.

When they are ready for planting they are conveyed by motor trucks to the public waters in cans similar to the common forty quart milk cans. The Commission now maintains a fleet of 42 trucks.

In an early chapter, we learned that fish require oxygen for their respiration, and that this oxygen is taken from the water. Where many fish are confined in one forty quart can, if unattended, they soon consume the supply of oxygen, and are suffocated. To guard against this, attendants accompany each consignment of fish from the hatchery to its destination. When the fish show signs of distress, the attendants aerate the water in the cans by a dipping process. This dipping process consists of dipping the water from the can and pouring it back from some height.

HERE AND THERE IN ANGLERDOM

While fishing in Wildwood Lake at Harrisburg recently, W. C. Smith of Harrisburg made a big catch of bullhead catfish and carp. One of the catfish, according to Special Warden C. L. Steigerwalt, weighed three pounds. Eleven other catties and seven carp completed his catch. The catfish were caught on shrimp bait.

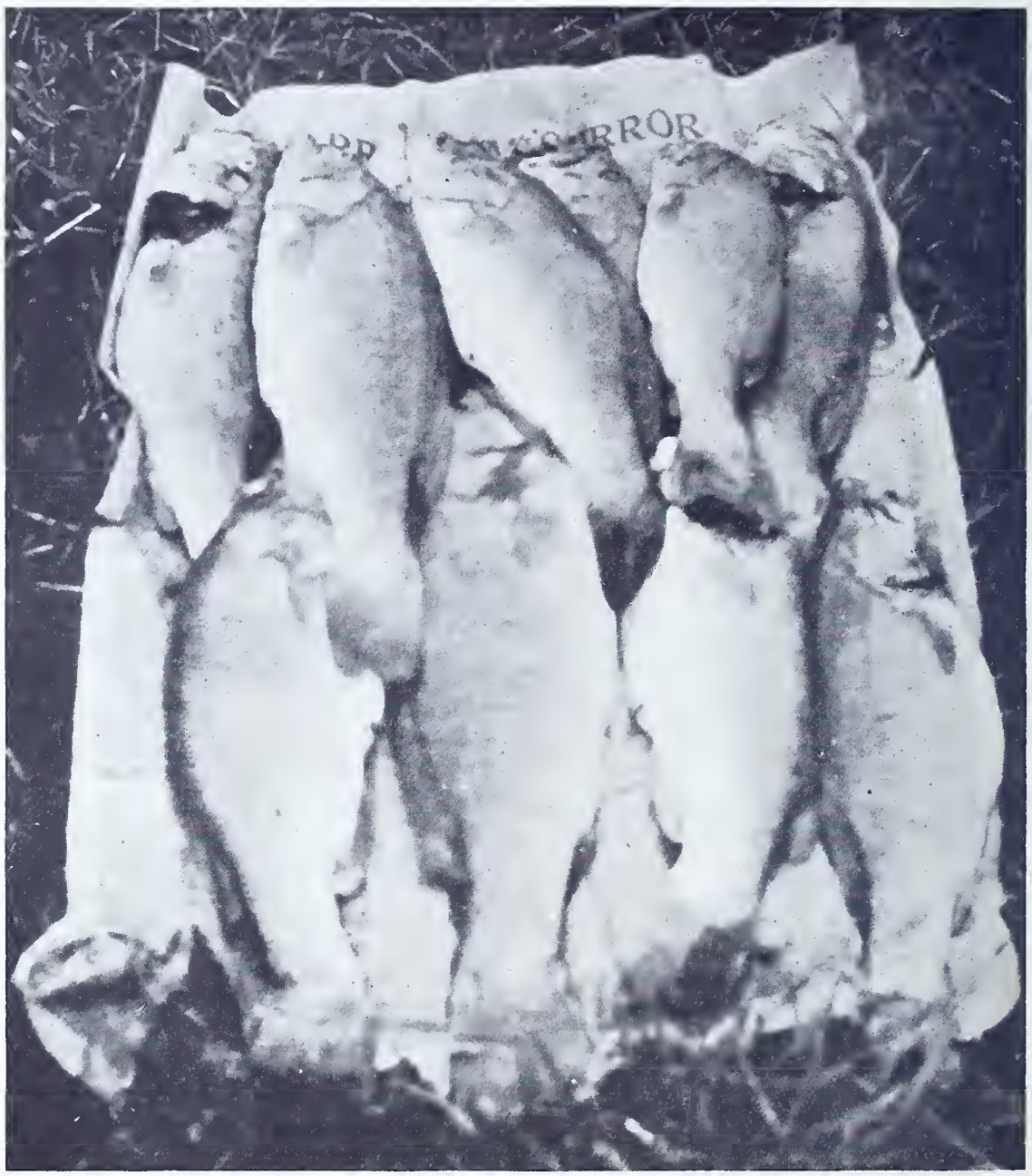
Now that pickerel fishing is in full swing, the catch made in October 22, last year, in Pecks Pond, Pike county, by Harold Allebach of Worcester should receive plenty of attention from those anglers who like to troll or skitter for these native game fish. Allebach, according to Harold K. Metzger, secretary of the Harleysville Gun Club, caught a pickerel measuring 29½ inches in length and weighing 6 pounds on a live minnow. He also landed a 26-inch pickerel at the Pond.

From Warden Anthony Lech at Shenandoah, Schuylkill county, comes word of good trout catches in that section of the state during June. Norman Dewald, Pottsville, scored with a 16-inch rainbow trout weighing 2 pounds in the Lehigh River at White Haven. Bill Miller, in six days fishing on Clarks Creek, landed 45 rainbow trout. Mrs. Edna Salamy, Shenandoah, caught a magnificent 17-inch brook trout weighing 2½ pounds in Fishing Creek, Columbia county. Scheldon Silliman, 14, landed a 23-inch brown trout in Hunter's Creek, Carbon county. Mrs. Mildred Hirst, Tremont, caught a 16-inch brownie in Fishing Creek, Schuylkill county. Anglers Hirst, Dutter and Evans, all of Schuylkill county, caught 30 trout ranging in length from 8½ to 12 inches in Cold Run Creek, Schuylkill county.

Warden George James of Carlisle, Cumberland county, has reported the catching of a 23-inch brown trout weighing 4¾ pounds in the Letort Creek near Carlisle. The big brownie was landed by George Cramer, Carlisle.

From W. E. Guchert, Pittsburgh, chairman of the North Boroughs Sportsmen's Vermin Hunt committee has announced a contest in which members will compete. Shotgun shells will be awarded for various types of vermin. The watersnake is included in the list, and three shells will be awarded for each snake turned in. Reports of kills are to be made at Lloyd's Garage, Emsworth. Prizes will be awarded for the three high scores in the contest.

Berks county fishermen have been making some fine catches of brown trout in the West Branch of Perkiomen Creek and Hays Creek, according to Warden Bill Wounderly of Reading. Bud Keim caught a brownie measuring 16½ inches, Howard Fegley, one 15½ inches, William Snyder, a 24-inch brown and another 21½ inches. Arthur Heere, a brown trout, 16 inches in length, and Dr. Arthur Detwiller, a 22-inch brownie. Hays Creek has produced to date at least 15 brown trout, ranging in length from 14 to 26 inches, writes Wounderly.



Catch of Smallmouth Bass Made Last Year on the Allegheny River by C. Joseph Richardson, Sistersville, W. Va.

Streams in Elk and Cameron counties have also been yielding good creels this season, according to Warden Robert J. Chrisman. The Driftwood Branch of the Sinnemahoning, produced catches of fifteen trout each to Mike Prechtel and Maynard Breinnel of St. Marys. Joe Mohr, also of St. Mary's, scored with 14, while other fishermen interviewed had catches of 8 and 9 trout. All were brookies.

With the thought of assisting anglers in the central counties to find more sport while astream, Charlie Fox and Don Martin, expert fishermen for bass and trout, have offered to give all possible information relative to equipment, casting advice and suggestions on where to find good fishing in the vicinity of Harrisburg. They may be contacted at Fort Hunter, near Harrisburg.

Deibler Dam at Spring Creek Stream Improvement Project
Near Bellefonte, Centre County

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PENNSYLVANIA ANGLER

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AUGUST
1936

OFFICIAL STATE PUBLICATION

PENNSYLVANIA ANGLER

AUGUST, 1936
Vol. 5 No. 8

PUBLISHED MONTHLY
by the
PENNSYLVANIA BOARD OF FISH COMMISSIONERS

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ALEX P. SWEIGART, *Editor*
South Office Bldg., Harrisburg, Pa.

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NOTE

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Vol. 5 No. 8

PENNSYLVANIA ANGLER

AUGUST, 1936

EDITORIAL

POLLUTION AND LOW WATER

Pollution and low water more or less go hand in hand and are almost synonymous. It has been the history in Pennsylvania that during the periods of our very lowest water levels that, just as the streams go down, the pollution loads seem to go up.

Since the middle of June, when our streams began to assume a very low stage of flow, pollution reports began coming in in greater numbers. Since that time, the streams have been constantly falling until now, in many sections of the state, they have reached the lowest level ever recorded, and, at the same time the greatest number of pollution cases ever reported to this office are pouring in daily. At the present time, it is very unusual if at least two new cases are not reported each day.

Among these recent cases, some of the greatest fish killings ever reported to the Fish Commission have taken place. One particular case that has attracted state-wide attention was the holocaust on French Creek, in which all aquatic life was completely wiped out for a distance of nine miles, extending from Meadville to Cochranton.

Here was a sight to rend the heart strings of every fisherman and sportsman, when the banks of this stream that has been famous for its wonderful fishing for many years, was strewn and littered with the dead and dying game fish. Thousands of beautiful bass, whose intrinsic value can scarcely be estimated, as bass of this type can not be purchased anywhere at any price, were killed. Here, too, were some magnificent specimens of the famous muskellunge, the kind that has made this section of the state famous among those who enjoy going after the big ones.

Requests and demands have poured into the office by letter, telegram, and personal messages, making demands that the guilty offenders be punished. Also that the Board immediately restock this stream and put it in the condition it was before this killing took place.

These requests and demands are very easily made by the average layman who little understands the many difficulties encountered in complying with such a demand. When sufficient evidence is obtained that will warrant a conviction, prosecution is always made and then, what is the result? A mere hundred dollar fine, no matter if thousands of dollars worth of fish have been killed, as happened in this case. A hundred dollars, which would not pay for more than a dozen of these bass and one or two muskellunge, is all that can be collected, and as to the restocking at once, this, too, is a problem that has not been taken into consideration by those demanding such action. Many factors must be taken into consideration before this can be done. It must first be determined whether the food life has been destroyed entirely. If this is the case, Nature only can replenish this and sometimes Nature moves in a rather slow fashion.

Then, too, the supply of the kinds of fish that were destroyed is not always available in this state or in any other one on quick demand.

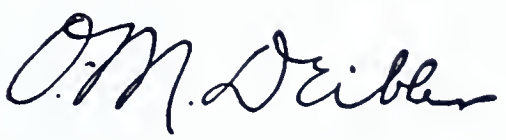
I have cited this case in detail, as it is typical of many others throughout the state, although perhaps this was a major one.

In many streams, fish have been killed where no greater amount of pollution entered than that which has been coming in for years, but with stream flow so greatly reduced and the same amount of pollution coming in, the concentration was many times greater and the temperature of the water higher, which resulted in many fish killings in practically every section of the state, that would not have occurred had there been a normal stream flow.

The Board of Fish Commissioners is being faced with one of the greatest problems at this time in the history of the Commission. Not only the fish life, but the food life as well, has been destroyed in many of our streams, and with no prospects at this writing of any immediate relief.

This situation puts the problem squarely before the sportsmen and fishermen, in that if they wish to have any fishing, especially on our trout streams, in 1937, for other than the trout that will be stocked before the opening next season, it is up to them to exercise every effort and assist in caring for the fish which are now facing just as serious a problem as did the wild life in the woods during the extreme weather last winter when the sportsmen throughout the state did a noble and wonderful job in voluntarily providing shelter and food for the game that was in serious distress.

It is the hope of the Board that the sportsmen will realize the condition that is now facing the fishermen insofar as their fishing is concerned for the future.



Commissioner of Fisheries

Light Bait Casting Lures

By CHAS. M. WETZEL

THERE are many fishermen who get a thrill in taking bass, pike and other game fish on the fly rod, using spinners and other light lures, yet there is always the fear that the delicate, fragile rod may take on a permanent set, due to the additional strain placed upon it in casting. For those who hesitate using a spinner on their pet fly rods, it may be interesting to know that with a light bait casting outfit, they can enjoy this same type of fishing without the fear and worry of ruining an expensive piece of equipment.

Bait casting differs from fly casting in that a weighted lure is cast with a short rod. In the following article we will confine ourselves to lures up to and including one-half ounce in weight.

The rod for casting these lures should be strong, flexible, and whippy, although stiff enough to insure setting the hook in the fish. My preference is for a five-foot length, light enough, so that when held horizontal with the half-ounce lure attached, the curve resulting from deflection of the tip will just be noticeable.

The most important part of the outfit is the reel—this should be a free running quadruple multiplier—that is the spool should revolve four times to the handle's once. Do not stint yourself on this item but get the best you can afford. The modern affairs are equipped with a device called the level winder which insures winding the line on the reel uniformly. Another recent development is the anti-back lash feature, designed to eliminate "bird's nests," or line tangled up on the spool. Neither the level winder nor anti-back lash, are necessary for successful casting, yet both are distinct improvement over the old time reel.

Next to the reel in importance is the line. This should not be heavier than nine pound test, if we want to attain any distance, in our casting, and this weight is sufficiently strong for any bass in our waters today. The part of the line that receives the most wear is the end at the tip of the rod. Test it frequently and break off any portion which may have become weakened.

For quickly attaching plugs, flies, etc., to the line with a minimum of labor, the gadget known as the snap swivel is generally employed. These snap swivels are procured in a variety of styles; some unadorned consisting simply of the snap and swivel; others with wire leader attached, used in waters where sharp toothed fish abound; while still others are weighted and used in casting flies and other light lures. Ordinarily no leader is used, the line being connected directly to the swivel. In the illustrations I have pictured this gadget and shown a few of the uses to which it may be put.

This may also be tied or procured weighted that is, using lead or some other heavy material for the body. Naturally the cast of these flies is higher than the ordinary run which can be used with the snap swivel weights costing only a few cents.

In general, my preference of all light lures is the feathered trebled hook and number two or three double blade spinner, equipped for bait casting with a snap swivel weight. In the absence of a tandem spinner a fluted spoon will give satisfactory results. This is, in the writer's opinion, the greatest all around lure yet devised.

Speaking of plugs, my old angling friend George Holland, winner of a number of prize winning fish contests, has a decided preference for the surface lure known as the "plunker." George, who first became a convert of this plug while fishing with Lou Drueding, well known Philadelphia sporting goods salesman, has kindly consented to describe the method in which it is worked through the water. Says George: "The head of the lure is dished or hollowed out, which causes the plop or plunking effect. Allow the plug to remain on the surface of the water for a short time after the cast then make a quick backward pull with the rod which will cause the plug to dive under and reappear again on the top of the water. After the waves or ripples subside, repeat the procedure—in fact, do it a number of times before retrieving the plug."

Another class of lures that work well on our waters are the following. Known under a variety of names as the "Shimmy Wiggler," "Dixie Wiggler," "Sheik," "Fan Dancer," etc., these lures have been responsible for the capture of many large bass, especially on the lower Susquehanna River. Among those best-known are the Shimmy and the Dixie, two of the old "stand-bys." Referring to the sketch and taking the "Shimmy Wiggler" as a typical example, it will be seen that these lures are in the nature of a fly and spinner. Some of them are equipped with a button, similar to a "collar button," which permits a ready and convenient means of attaching pork rind. This pork rind is secured to the extra hook that is interchangeable with the fly, although many anglers attach it directly to the bucktail and the holding button.

Frankly, it has been my experience that on our streams and rivers,—excluding lakes, quarry holes and the like—the fly and spinner, or imitations of this lure, are far more productive than plugs. Why this is so I am unable to state, yet in the fall, when the nights grow chilly, plugs work much better.

Another popular lure is the "Oriental Wiggler"—used with pork rind, attached as previously deseribed; this bait is excellent for both pike and bass.

All of us have our favorite plug; it may be the red and white "Bass Oreno," the jointed "Pikie Minnow," or any of a multitude of others, yet a new one comparatively speaking has come on the market that may outclass many of those old reliables. I refer to the River Runt; this plug made of pyralin, is light in weight and has a most enticing wiggle as it is worked through the water. The River Runt is procurable in both the surface and under water types. The floater keeps close to the surface, in fact at twilight, when undulations on the surface show up sharply, the furrow left in its wake is easily discernible. Probably that is the secret of its success, for without doubt it will catch fish.

Within five minutes' walk of my house is an old quarry hole fed by deep seated springs. Having a body of water so close to home is quite an asset, particularly if there are bass in it; and this one has,—for within the week I have caught and released exactly thirty-two taken on the River Runt. All of these bass were small, ranging in size from nine to thirteen inches and it is safe to assume that during the week the majority were caught at least two or three times. All in all, there are probably fifteen fish (bass) in this small body of water. Had I kept them, the memory would have quickly faded, but as it is, I am anticipating good nearby fishing throughout the season.

3000 FISHERMEN TRY WALLENPAUPACK ON 4TH

Wardens John Schadt and Frank Brink, patrolling Lake Wallenpaupack in Pike and Wayne counties on the Fourth of July, report that conservatively 3000 fishermen tried this famous fishing ground on that day. By eight o'clock in the morning, not one boat was available and hundreds of anglers tried their luck from the shoreline.

Many catches were made, more wall-eyed pike being taken than bass. Pike ehecked ranged in length generally from 15 to 24 inches. A large number of yellow perch from 9 to 14 inches in length were caught as were numbers of rock bass. Some nice largemouth bass were reported and a few smallmouths.

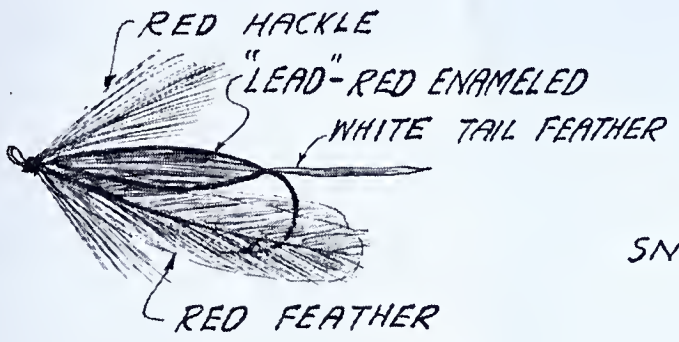
YORK WALTONIANS STAGE BIG PICNIC

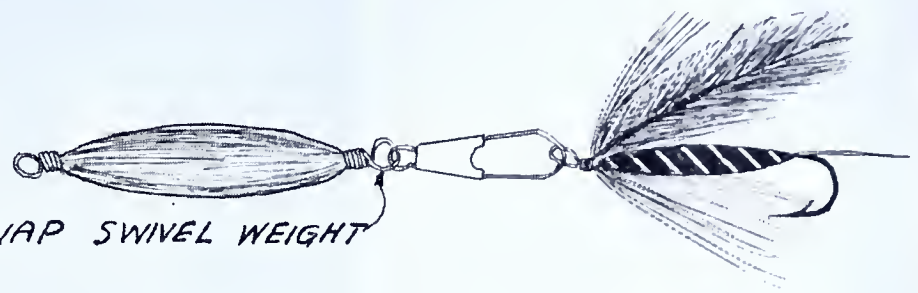
Bait casting competition was one of the features at the annual outing and field day held last month by York Chapter No. 67 of the Izaak Walton League of America at Davey's Park near Red Lion. Eight hundred members and their guests attended the outing, regarded as one of the most successful in recent years.

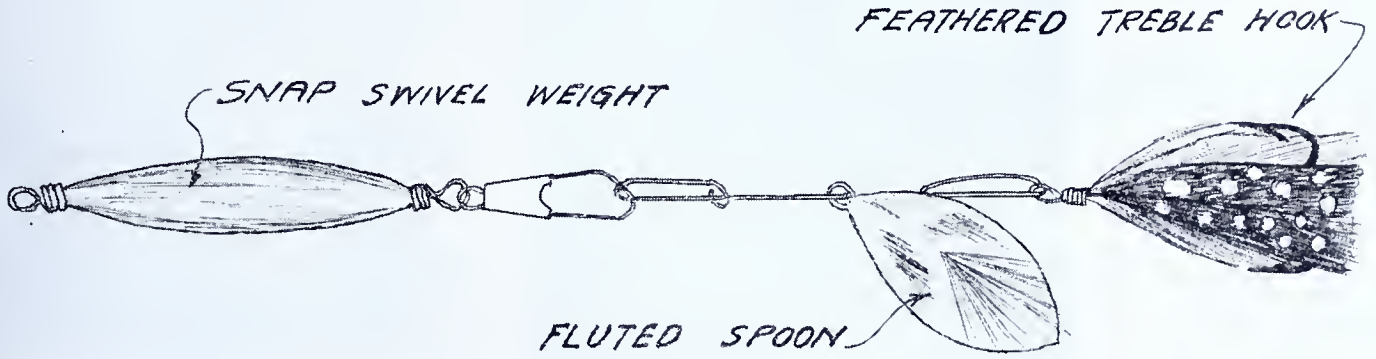
In the bait easting, ⅝ ounce accuracy event, D. A. Garver won first prize, and Harry Abel placed second. D. A. Garver also placed first in the bait casting distance event. Chester Paup scored the longest cast.

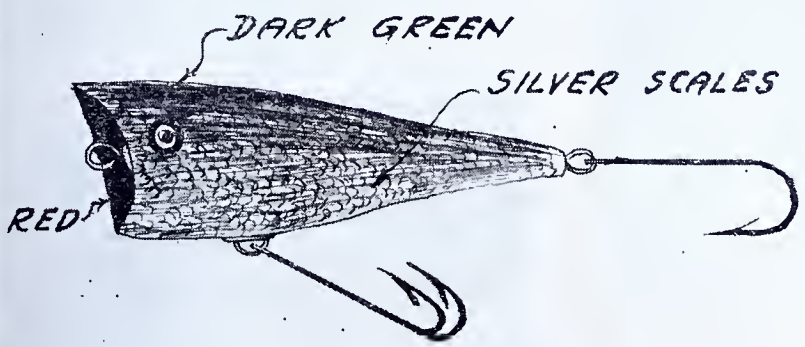
Other events scheduled were trap shooting, quoit throwing, dart throwing and card games in which many of the ladies participated.

SNAP SWIVEL TRACE

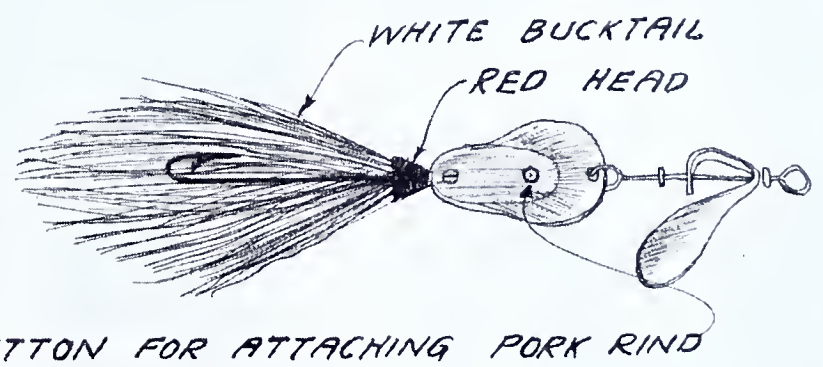




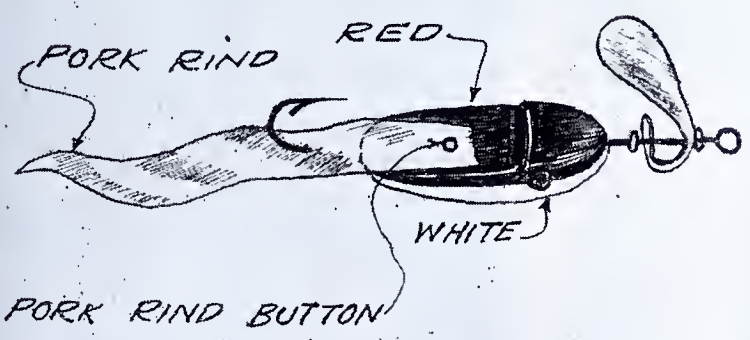




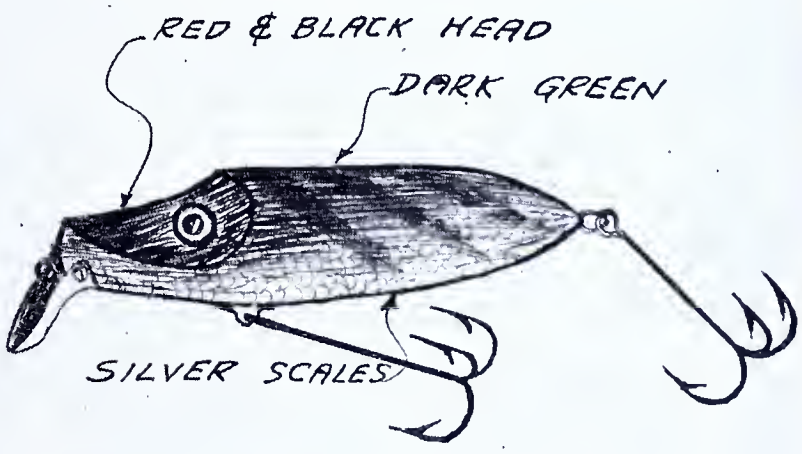
PLUNKER



SHIMMY WIGGLER



ORIENTAL WIGGLER



RIVER RUNT.

Wetzel 6-36

Bass "Bugs"

By Charles K. Fox

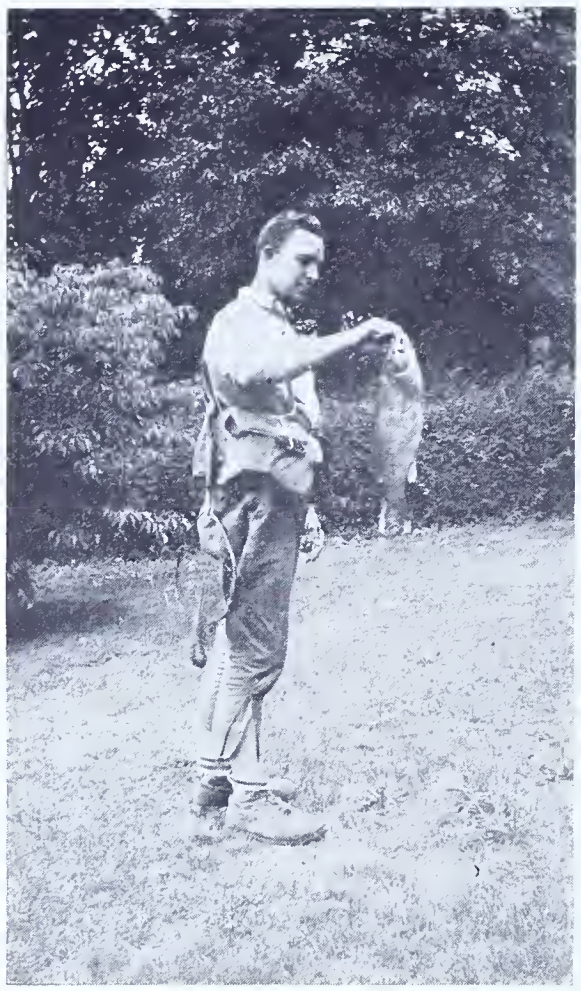
BASS fishing gets under my skin, and the better it is the crazier I get. This is what is known as bass "bugs." As a matter of fact, I thoroughly enjoy my bad health, and fortunately it has no cure. Strange as it may seem one of its greatest causes is bass bugs. (No, this is not a misprint.) I have spent many hours thinking about lures and experimenting with them. No matter if they are tossed before the bass with a fly rod or a bait-casting outfit they are equally intriguing and sometimes provoking.

About six years ago I read an article written by Pennsylvania's Ken Reid, which started the music going round. The author vividly described a fly rod bass bug which he called the hair frog. It was a regular sorceress to the bass; they just couldn't pass it up. He stated that these lures were not tied commercially but there were a few around. To make matters worse I digested this article when I should have been cramming for an exam at college. There, my friends, is an obstreperous combination. Finally I decided that no hair frogs were going to cross my path so I contented myself by clipping the article and dismissing the subject. Several years later "bad health" took me to Philadelphia and I wandered into the sporting goods department of a store. There before me in a show case was not one hair frog but a whole nest of them. They were expensive and I was almost broke so I compromised and bought a dozen. Yea verily, Ken was right; he had exaggerated not one iota.

Attach a yellow sally to a gold spinner and work it over some bass. You will probably enjoy the experiment. There is only one way I'll ever be convinced that yellow is not the best color for bass and that is by a high pressure salesman who swears by black. As it is now I start out with yellow if the day or water is cloudy, and if both are bright I try black first. That word first probably gives me away. If the water is very clear, a Lord Baltimore fished like a nymph without a spinner has been known to do the trick.

There are many lures on the market, legion is their name, yet all have their place. By looking through the tackle stores I have learned that the diet of a bass consists of feathered fish, cork crickets, metal plates, deer hair, wooden amphibians, red mice, and unidentifiable organisms. What's more, once in a while the bass show me that this is true. What does all this prove? Do bass prefer to examine morsels with their mouths to decide whether they are eatable or not; or are they induced by emotions such as pugnacity, playfulness, or curiosity, to take a crack at an object, say a nine-foot leader, I can content myself by leaving the mystery unsolved.

Probably the way in which we fish a lure is more important than the choice of lure; but on blank days we don't like to admit this because it reflects upon us and not the manufacturers. We expect much from the



This Man is "Bass Bugs"

manufacturers and they deserve great credit. Their products are equally adroit at catching fish and fishermen. Some days the bass just won't oblige us, and after we have manipulated a lure in just about every way possible without a stir we start all over again with a new lure and high hopes. No class of people in the world is so slow to realize defeat as the angler.

Day in and day out artificial bait will outscore live bait 2 to 1 or better. The reasons for this are: the lure can be presented in a much more natural and delicate way from longer distances; it is more active, and much more ground is covered.

Suppose I were to tell you that more and bigger bass can be caught in this state by employing the bait-casting outfit and its little lures than by any other method, what would you say? I know I am treading on toes and putting my head in the noose but, gentlemen, take it or leave it, that is the case. I don't have so many backers on my side, but maybe some day I will have. Now that war has been declared I will have to account to some of you for this gross insult. First of all consider our bass waters. Most of them are large streams such as: The Susquehanna, The Delaware, The Juniata, and the lower reaches of Pine Creek, Penn's Creek and the Loyalsock. The man with the fly rod is limited to the riffles and small pools; those large pools, which really carry the big fish of the stream, are out of his reach. Even if he could cover any part of the big pool he could not sink his lures deep enough most of the time. Now, try bait-casting, we can go to town. The lure can be sent 130 feet in any direction, and it can be retrieved at any depth. Just several feet for a backcast is all that is necessary and casts can be made from under overhanging branches. There is only one condition where we will concede the fly rod and its lures the advantage, and that is on a small stream when the water is crystal clear and low. But even at that if a contest were held the outcome might be a draw; no hits, no runs, no errors for both sides. The fact that a fly rod handles a lighter leader does not quite offset the good qualities of bait-casting.

If perchance some live bait man has read this thus far, let me give him an earful. "Say, friend, you don't know what it's all about; you don't realize what you're missing. Not until you have felt the explosive strike which comes with a perfect cast and the proper retrieve have you angled. It's not tiresome to wade a stream flipping bugs here and there; and it is not hard to get on to it either. When you hook a bass on live bait you are not luring him: he is just eating his regular food. If you take him on a sliver of metal, a piece of carved wood, or a hank of hair then you are fooling him. It is much more fun to fool them than to feed them. This is the difference between fishing and angling. Don't you realize that the amount of natural food you bait fishermen kill each year is injurious to your sport? How about the small bass that are hooked too deeply? Isn't it inconvenient to

A Big Bass Caught on a Light Casting Lure

catch a lot of bait and then try to keep it in good condition? It is no trick or fun to take a six-inch bass on a worm. The fish run larger on artificials and they are always hooked by the lips. Just as sure as winter gives way to spring, live bait fishing will give way to angling, because of the superiority of the latter. Give plugging or fly casting a whirl; seriously there is nothing in the world which surpasses bass 'bugs'."

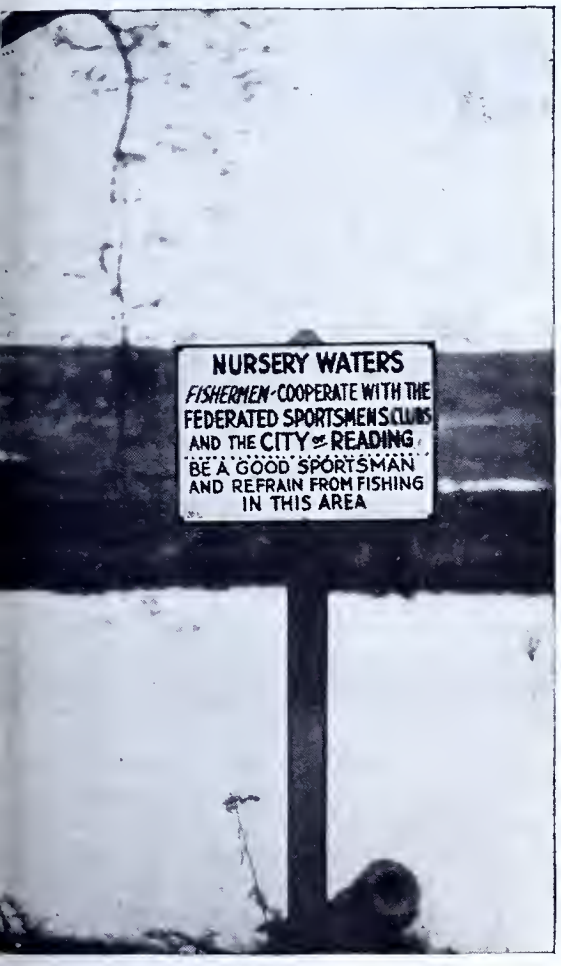
CREDIT LINE

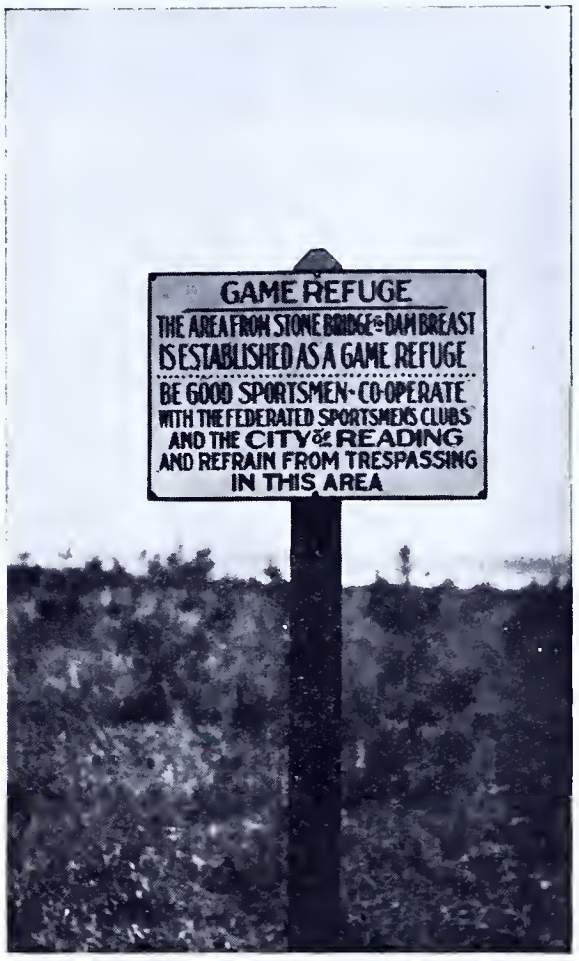
Due to an oversight, the ANGLER failed to extend credit to the *Allentown Morning Call* which had kindly granted permission to use the photo in the May issue showing presentation of a watch charm to George Zimmerman, veteran Lehigh County sportsman, by Seth Gordon, Executive Secretary of the Game Commission. It is regretted that this omission occurred.

Organization Plus - - - !

By Darlington R. Kulp

Chaplain, Berks County Chapter, Izaak Walton League of America





THE plus of organization is cooperation, and the result equals accomplishment. The pictures on this page tell a story that should be of interest and practical assistance to every sportsman's organization and public official in Pennsylvania. On Reading's watershed they have been placed by the city officials at the suggestion of the sportsmen of Berks County. They invite the cooperation of the public in conserving the fish and game resources of the area, and at the same time sound a warning to all who disregard the rights and privileges of the sportsmen. They also emphasize what can be accomplished through efficient organization and cooperation.

In Berks County there are twenty-one sportsmen's organizations, among which is the Berks County Chapter of the Izaak Walton League of America, affiliated with the Association of Federated Sportsmen's Clubs. This organization represents more than two thousand sportsmen and is actively engaged in promoting conservation and game and fish propagation. It also serves as a clearing house for the many issues which confront the local sportsman, and formulates policies which, when approved by the local clubs, are executed by the federated unit. Consequently when its leaders speak they speak with the voice of authority. They are not only heard but are in a position to get things accomplished.

But organization without cooperation on the part of the officials concerned results in chaos and an expenditure of money and energy, which terminates in a state of inactivity and indifference. The sportsmen of Berks County are fortunate in having a city administration that cooperates with them one hundred per cent. This does not necessarily mean that they get everything they want but it does mean that they have a chance to be heard through their central organization. The sportsmen have been so much encouraged by this municipal support that they are keyed up to do even bigger and better things in the future than they have done in the past. They know that their communications will not be pigeon-holed and their conferences go up in smoke.

All that the sportsmen's organization can rightfully demand of any political unit in its community is the opportunity to show what it WILL do for the welfare of the community if but given a chance to apply its policies of conservation, propagation and distribution of game life. All that the sportsman's organization expects from the officials responsible for the property belonging to the community is their cooperation. Organization plus cooperation results in accomplishment. The public will soon discover that the SPORTSMAN is neither a selfish creature nor a ruthless killer of game and fish, but rather a citizen who is striving to accomplish things for the common good. Mr. and Mrs. Public may have no desire to hunt and fish, but they will soon become conscious of the recreational facilities available to them as a result of the sportsman's efforts. If not already awakened to the pleasure and security afforded by streams free from pollution and an environment in which wild life in its natural state can live—not to say anything of the economic value realized—they will soon catch the spirit and respond to the appeal of the sportsman.

Public officials, who are alert and on the job, not only invite the cooperation of the sportsmen but welcome it with outstretched arms. It relieves them of many burdens and saves them many headaches. At the same time it will gain for them the support of a section of the electorate, which, if they are politically wise, they can well afford to consider.

MANY ANGLERS TRIED FISHING CREEK

From Special Warden A. A. Allegar of Berwick comes the following interesting letter on trout fishing in Fishing Creek, Columbia county, last year. He writes:

"One of the greatest topics of discussion at this time of year among sportsmen is trout fishing. Sometime ago there was an item in one of the local papers regarding the past season and telling of the poor catches reported locally.

"I must disagree with the local editor on that point, due to the large number of fishermen one meets on a stream. I refer to Fishing Creek, Columbia County, one Saturday afternoon in May of the 1935 trout season. I stood on the bridge at Grassmere Park, where one can see for about one-quarter of a mile, looking up and down the stream. I counted eleven fishermen fishing that stretch of water. Fifteen years ago quite likely you would have seen but one. Now, supposing each of the eleven fishermen catch and keep one or two fish each, it would have made one fine catch for that one man fifteen years ago. I am not exaggerating when I say one could notice a regular path worn in the gravel on the edge of the stream. I was fishing with George English of Berwick when he called my attention to it. We were then between Long's Bridge and Grassmere Park.

"Fishermen are increasing on this stream each year and it makes one repeat the Board's slogan,—
"If You Would Catch More Fish, Kill Less."

Pike perch are also known as yellow bass, yellow pike, Susquehanna salmon, and wall-eyed pike here in Pennsylvania. Their eggs measure about 110,000 to the quart.

Carp Control

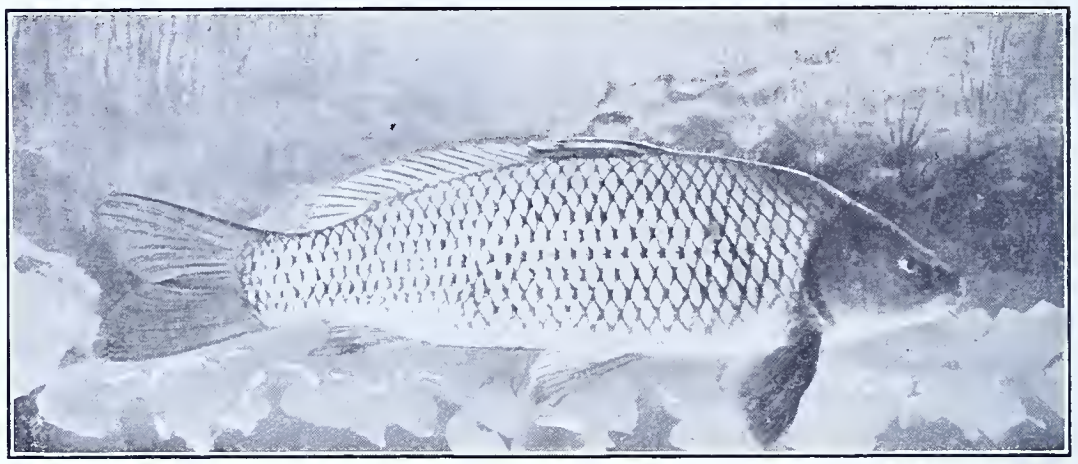
Hook and Line Fishing is an Effective Method

By ALEX P. SWEIGART

A FISH unknown to our inland waters 75 years ago, the carp today ranks as one of the problems confronting fish conservationists. The manner in which it has adapted itself to conditions existing in our eastern warm water streams and lakes has been amazing. Records of the Fish Commission indicate that it was first introduced to Pennsylvania waters in 1880. It is said that many of the carp received from the United States Fish Commission at that time were allotted to farmers who released them in private ponds, only a few being stocked in the public waters. With the disastrous flood of 1889, according to one theory advanced, many of the carp being held in private ponds were swept into major public streams, where they have, almost without exception, become abundant.

In considering the status of any alien fish introduced to our waters, several factors enter. How prolific is it? What size does it attain on an average? What are its feeding habits and from what source does it derive most of its food? Is it desirable from the viewpoint of the average angler? Finally, and most important, are the benefits derived from its introduction sufficient to offset the damage which it may cause?

Weighing the merits of the carp against its faults, we believe that it occupies a rather neutral position. First of all, the species is exceedingly prolific, mature females often depositing from 250,000 to 500,000 eggs. While the size of adult carp varies on different waters in accordance with the range and supply of natural food available, mature fish frequently may average from 12 to 15 pounds in weight. The largest carp reported taken on hook and line, to our knowledge, weighed slightly over 40 pounds and was caught in the Susquehanna river near Harrisburg. Insofar as forage is concerned, the chief food of the carp is vegetable matter. From the popularity angle, a constantly increasing number of sportsmen are turning to carp fishing, and in some sections of Pennsylvania it is not exaggerating to say that the carp stands first.



That undesirable features of the carp exist, we, of course, admit. The most serious count against it concerns its foraging habits. Mainly vegetarian by nature, its feeding is generally during late evening, night or early morning. In its diet also are included water insects and other small aquatic organisms. While rooting in aquatic plant life to secure its food, it may destroy valuable forage producing vegetation. Its activity, particularly in stream areas having an excess number of carp, frequently, in periods of low water, may result in a roiled condition of water which prevents sunlight from penetrating to the all-important vegetation on the stream bed.

Time and again, we hear diatribes directed against the carp as a destroyer of the spawn of other more desirable species of fishes. We do not believe that much background exists for such charges. True, the carp is a bottom feeder; so is the sucker, and it is possible that any species securing its food in this manner may, when an opportunity is presented, devour the eggs of other species. But let us check more closely on chances afforded the carp to destroy spawn. Early spring spawners, the sucker, the pickerel, the wall-eyed pike and the yellow perch deposit and fertilize their eggs and then desert them. The first three species generally run up tributary streams to accomplish this mission, and the eggs are deposited in areas not greatly disturbed by the carp during early spring. In lakes and ponds of northeastern Pennsylvania, the yellow perch moves into shoal water at the shoreline to spawn. Carp activity in such waters, owing to general low temperature prevailing at the time, is not extensive.

Later in the spring, late May and early June, we find members of the sunfish family, the black bass, smallmouth and largemouth, the bluegill sunfish and the common sunfish or "pumpkinseed" spawning, and these fishes protect their nests with such vigor that carp present in the same water do not constitute a serious threat. Both parents of the bullhead catfish protect their eggs and young until the latter break away from the swarm to forage for themselves. Some of our valuable forage fishes spawn under rocks as a protection to their eggs, others on shallow riffles not often frequented by carp. This brief checkup on spawning habits of the various species of fish life usually found in waters inhabited by carp would indicate that the spawn eating tendency of the fish has been over-emphasized.

The growth attained by carp is another element that must be considered. With the possible exception of the muskellunge, found in a few lakes of northwestern Pennsylvania, the carp today attains a size in our waters unequalled by any other species. It it fair to say that the larger the fish, the more food required to sustain it, and, without doubt, a school of large carp may in

An Interesting Head Study of the Carp

the course of the season's feeding destroy large quantities of valuable vegetation and many small aquatic organisms. A group of these big fish, wallowing about in the shallows near shore, their broad backs and dorsal fins frequently protruding above the water surface, form an impressive picture. We recall on one occasion, the remark of a veteran carp fisherman in this connection: "Just a nice fat bunch o' water hogs a-wallerin' ". Strangely enough, that school of giant fish did serve to make his expression accurately descriptive.

Now, let us turn to a factor in the carp situation that makes control of this species as to number essential. When we consider its place of origin, the rivers of China, its spread through the agency of man to the waters of continental Europe and later North America where it has become abundant, some idea may be had of the extreme versatility of the species in adapting itself to strange environment. While it has been said that the carp thrives most notably in waters of muddy and weedy bottom, its abundance in many of our rock bottom streams, the North Branch of the Susquehanna River and the Upper Allegheny, for instance, lends background to the belief that few of our clean inland waters are to be regarded as unsuitable to it.

A mature female may produce 500,000 eggs, and on occasion, this number may range to 700,000. Fortunately, the young are heavily preyed upon by other species of fishes, as are the eggs. Some of our minnows are voracious spawn eaters and it is not improbable that these forage fishes account for vast numbers of carp eggs each year. Apparently, nature, in an effective way, sets about to prevent overpopulation of the waters with any one species, for it has been noted that while, on many of our streams and lakes containing carp, larger individuals are frequently observed and caught, the proportion of adults in comparison to the vast number of eggs deposited each year is slight. We must also regard the presence of great numbers of young carp as a distinct asset to the supply of game fish forage, a fact often disregarded by critics of this fish. However, it is apparent that additional control measures to those provided by nature are necessary to hold in check the numbers of this extremely prolific fish.

Concerning Carp Control

Varieties of carp common to our waters today are the leather carp, a scaleless species, the mirror carp and the scale carp. Leather carp, commonly known to carp fishermen as "leather-backs," are hard fighters when taken on hook and line.

Various methods of carp control have been tried in the past. Spearing, while productive of fair results on occasion, would be extremely difficult to regulate satisfactorily. On a wide-spread scale, it is believed that the harm caused other desirable species of fish life through indiscriminate wielding of the gig or spear would offset any material gain through reduction in the number of carp.

Just how hopeless seining may be was amply demonstrated several years ago at Conneaut Lake in Crawford county. Having received many reports of vast numbers of carp in this fine fishing ground, the Board engaged the services of a commercial fisherman on Lake Erie to reduce the carp population through seining. Three days of intensive netting, with the finest equipment available on a large scale, produced disappointing results. While hundreds of game fish were caught in the nets and released, and a number of gar pike taken and destroyed, comparatively few carp were seined. It is believed that the carp, extremely timid fish, eluded the meshes by burrowing into the mud of the bottom, thus permitting the lead lines to pass over them. When we consider the length of our larger bass streams containing carp, such as the Susquehanna, Delaware and Allegheny, it is obvious that use of seines in taking these fish would be a tremendous task with probably negligible results.

A Party of Carp Fishermen With Their Catch on the Lower Susquehanna

Outstanding as a method of carp control in Pennsylvania during recent years has been hook and line fishing. The ranks of the carp fishermen have steadily increased in number and in some localities carp-fishing contests are being staged this year. Apparently, even intensive still-fishing cannot exterminate the carp, but it does serve in reducing their number, and, as a control factor, we believe it to be most effective under present conditions. Carp may be taken at any time of the year in Pennsylvania on hook and line, Sundays excepted, and there is no size limit set for the species. From the angle of sport, a 10-pound carp is capable of furnishing an amazingly dogged fight, entailing careful playing owing to the tender structure of the mouth in which the hook is embedded.

This type of fishing requires patience and considerable study. Frequently, after locating a school of the big fish, the fisherman decoys them to a chosen spot by baiting the location he intends to try with sweet corn or corn meal for a week or longer. Included in popular baits are doughballs, in which some fishermen use molasses, corn and cornmeal. After a carp has found the bait, with which it may toy for ten minutes or longer, moving it about on the bottom until it has maneuvered the lure into suitable position for swallowing, it starts moving away. The hook is then set and the battle is on. In carp-fishing, some anglers prefer a rather limber rod which is added insurance against tearing the barb from the quarry's mouth. Sinkers heavy enough to hold the bait on the bottom, and a black line not too heavy are also favored equipment. The line, instead of being stretched taut to the rod tip, is permitted to remain slack and resting on the bottom of the stream. Canned sweet corn is an effective bait and the largest corn of this type obtainable is used. Early morning, late evening and night fishing are most popular.

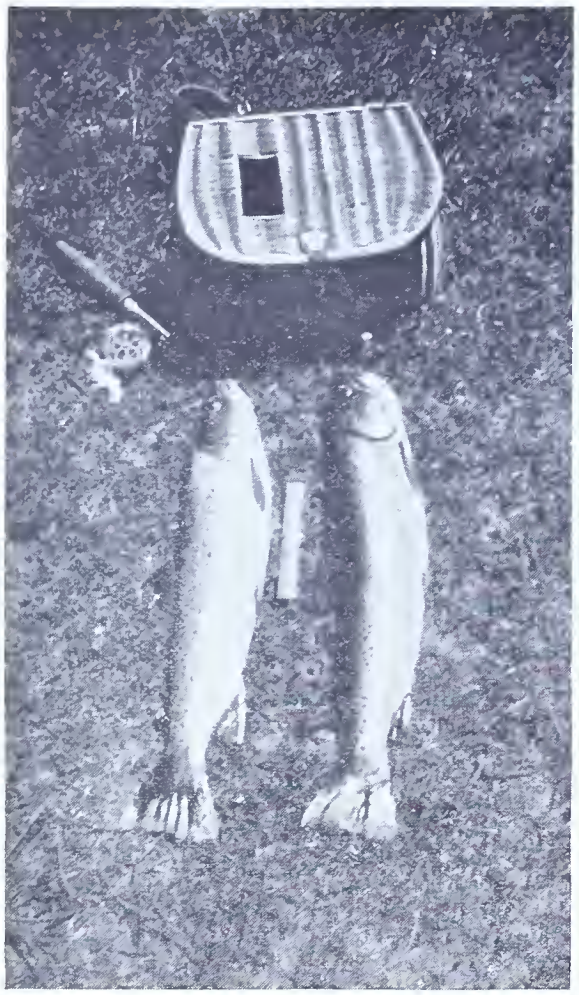
As a Food Fish

A coarse fish, the carp is a member of the family *Cyprinidae*, largest of the families of fishes which includes the minnows. While exceptionally large specimens are frequently strong and have a disagreeable muddy taste, carp weighing from four to twelve pounds are not undesirable as food fish, if prepared properly. Some fishermen take live carp and place them in pure spring water for a period of from one to two weeks. It is believed that the spring water aids in removing much of the objectionable muddy taste from the fish.

If this plan may not be followed, carp may be prepared by scaling and then skinning. An old carp fisherman once said that in cleaning a fish he cuts away the flank or ventral surface and discards it. The carp is first scaled and then the skin is removed, starting at the base of the tail and pulling it forward. Frequently a pair of pliers simplifies the skinning. Care should be used to prevent tearing the skin while removing it.

With the annual take of carp by hook and line fishermen increasing each year in Pennsylvania, the problem of carp control in our waters is simplified. Certainly a reduction in number of the species is highly desirable in heavily infested streams or lakes. And still, we are inclined to think that this immigrant to our waters is deserving of more intensive study in its relationship to other species of fish life. There is, for example, this angle to be considered, that apparently little harmful effect to game fishing is to be observed on one of our outstanding bass streams on the eastern seaboard, the North Branch of the Susquehanna River, through the presence of a dense carp population.

Facts available would indicate, as we said before, that the carp, as a problem, is on somewhat neutral ground.



Two Brown Trout, 23 and 23¾ Inches, Weighing 4 and 4¾ Pounds. Caught in Tobyhanna Creek, July 10, by H. S. Darlington of Media

HUNTINGDON SPORTSMEN VERY ACTIVE THIS YEAR

The Huntingdon County Game, Fish and Forestry Association membership enrollment has reached 325 with 500 members as their goal this year. This club was organized last February with 68 members. The board of management is composed of 12 directors, the officers of the association being elected from this board are as follows: W. B. Simpson, Huntingdon, President; G. I. Phillips, Alexandria, Vice-President; T. Roy Morton, Petersburg, Secretary, and Fred Mark, Huntingdon, Treasurer.

Soon after organization a very interesting schedule of activities for the spring and summer months was announced and the sportsmen of the county are taking an active part as they realize the necessity of conservation and the benefits of being organized.

Of the various Committees the Fish Committee and the Contests Committee are most active at this time.

The Fish Committee with J. Simpson Rodgers as chairman has done fine work this spring on stocking trout and they have arranged for summer stocking of trout, bass and pike-perch, also, they are going to conduct a survey of the streams of the county to check water temperatures and compile data which will aid in future stocking. This Committee brought to the attention of the Association the presence of a large sawdust pile on the banks of one of the county's best trout streams, explained that this condition threatened to pollute the stream and advised as to what course should be taken to compel the owners of the mill to remove this menace. This Committee after hearing numerous rumors of pre-season catches of bass employed a special warden who is patroling some of the better bass waters in an effort to control those "sneak thieves" who steal our game fish while the "good sportsman" awaits the opening of the season. A drive is being made to remove mine pollution from Trough Creek and we hope we are going to get results. (Trough Creek would make excellent trout water if the pollution can be eliminated.)

The Contests Committee is conducting the following contests: Season Contest for longest trout; open to members only, Prize —Brook Trout Class is a $15 Fly Rod—Brown Trout Class is a $15 Fly Rod (a 12½" brook and a 19¼" brown hold first place to date).

Crow Contest: Open to members only, club divided into 5 teams, the 4 losing teams will be guests to the winning team at a gathering in October, prizes to 3 high "crow killers."

Watersnake Contest: Open to boys up to 16 years old, a bounty of $.05 paid for each snake and a prize to boy killing most snakes. First day trout prizes were won by W. W. Nace, Petersburg, with a 12¼" brook and Carl Goodman, Water Street, with a 15½" brown.

PORTO RICO SUBSCRIBER RECALLS DAYS ASTREAM

Those happy days with Pennsylvania trout and bass last year are cherished in memory by Wilbur T. Patterson, now located at Las Marias in Porto Rico. He writes:

"Received your November issue of the ANGLER, and wish to say that it is the best reading I have had since coming to P. R. I'm sure hoping for a successful year for the ANGLER, and also a good year for the fish and fishermen.

"When the fishing season is over it becomes a time for sad meditation, and expectant contemplation. But, when the fishing season is over and you are far removed from the scene of next year's action, it is indeed a sad state of affairs.

"Here, I am located in the school system of Porto Rico and the only mountain fishing that I can have is through the imagery of past years, and the last year in particular.

"How well I recall that week spent on Lyman Run in Potter County. They said the trout were not taking anything, but by dint of hard work, and some careful study of the trout I managed to hit upon the successful flies. A number fourteen brown bivisible and a number sixteen black bivisible did the trick for the entire week. I got a nice catch each day that I fished and all of the trout were a nice size. Especially those trout on Corbett Branch. You know! Where the C. C. C. Camp had installed those current deflectors. Every deflector harbored a nice plump brook trout and occasionally a scrappy brownie. Possibly the best thrill of the trip was the hooking and landing of a fourteen and one-half inch brook trout out of a rocky pool on Lyman. And yet, I look back at the big brownie that took my fly under a submerged stump. How do I know that he was big? Well, to verify facts I sneaked to the hole two days later and watched him lying near the base of a projecting log. No whopper, but a good seventeen to nineteen inches.

"Last year was a good example of the value of learning the characteristics of a stream. The year before I was strange to Lyman Run, but now I know many of its pools, and the habits of the trout. Each day that I fished last year I discovered

Edward Webb With a 4 Pound Smallmouth Bass Caught Near His Home at West Chester

Samuel Flock, Jr., of Williamsport Is Justly Proud of this 15½ Inch Native Brook Trout He Caught Last Year

new holes, habits, and peculiarities of the stream. True, I am far from knowing the stream as the natives do, but it will help when I return in two or three years. At least, I hope it will help me as a starving man can eat plenty of food.

"How was the bass fishing? Now let me see Yes, I can clearly recall some of the highlights. That No. 6 brown bivisible with a small spinner sure had the local folks guessing. They attributed my nice catches of fish to everything from dynamite to the old fashioned pitchfork and chicken wire. I didn't take any whoppers but my catches were of uniform size. You know, just between ten and thirteen inches. The strange thing was that I used that combination with deadly effect for the first week and one-half of bass season, and then the bass refused to take it any more. From that time on my luck in the Little Neshannock was finished, and I had to turn to the Allegheny River.

"High water and occasional rain storms gave the bait fisherman a big advantage on the Allegheny, but my companions and I managed to take a few nice bass. On the Allegheny I do almost all my fishing with a fly-spinner combination, and floating surface plug. We cast the fly-spinner combination until dark and then turn to the surface plug. I don't think that I took more than thirty-five bass out of the Allegheny, but that nineteen-incher from below the Hunter Station bridge sure gave me a nice fight in the dark. I can still hear him splashing, and feel the line burning my thumb. As last year was not so good for me I am going to roll my brain back to the year '33-'34.

"The first week in July found my uncle, several companions, and myself on the Allegheny, just below Hunter Station. There were some very large hatches of white drakes or May flies, and I don't know whether that had anything to do with the fishing or not. But, my uncle discovered that the bass would follow a large red and white bucktail. They would not swallow it, but would take an occasional "crack" at the streaming hair. We hit upon the use of a No. 1 grey hackle with a spinner and casting weight. Did it do the trick? I should say it did. In fifteen casts my uncle hooked fifteen bass and landed twelve of them. Seven were large enough to keep. He then gave the fly to me and I made a dandy catch in about thirty or forty minutes.

"The next day, July sixth. I think, was our last day in camp so we got up before daybreak and did some surface plug casting. I took two nice bass and my uncle took four. When the sun had risen we went to a nice hole opposite 'our' island. My uncle was using a fly made from some grey chicken hackles. With this home-made fly, he certainly set those bass crazy, and I duplicated the feat. Rather an uncolorful account, but wait a moment. I then took up a position at the head of a long, swift riffle. On my first cast I hooked into a two and one-half pound bass that measured sixteen and three-quarter inches. The second cast duplicated the first, and the third was a duplicate of the previous two casts. In three casts I took three smallmouth bass that did not vary an ounce in weight nor

Daughter of Representative Mahlon La Rue, Shillington, With Two Fine Smallmouth Bass Her Father Landed

a quarter of an inch in length. In hooking and landing all three fish I did not have to move my original position. You are welcome to think that those bass didn't have my hands and legs trembling, but I know the facts and surely would like to have a repetition of that performance in the years to come."

The constant twisting of the line while trolling will unwrap a twisted line. All trolling lines should be of the braided variety.

ANNOUNCE PRIZES IN FISHING CONTEST

The Mechanicsburg Sportsmen's Protective Association in Cumberland County, one of the most active conservation groups in central Pennsylvania, makes the following announcement of a fishing contest which it is sponsoring.

Bass Season Is Here!

Your association comes through with a timely contest. When you go out for the wily black bass, bear this in mind—Your association is offering three fine prizes to the three anglers catching the largest smallmouthed black bass. This contest is open to everyone—members and non-members alike. Here are the conditions:

1. Fish must be taken legally.
2. Only smallmouthed black bass are eligible.
3. Awards to be made on basis of weight only.
4. Any number of fish may be entered.
5. Entrants are eligible for only one prize regardless of the number of fish entered.
6. The bass entered may be taken in any water within the confines of Pennsylvania.
7. There is no age limit for contestants.
8. Contest closes October 15, 1936, at 6:00 P. M.
9. Fish may be taken on either artificial or natural lure.
10. All fish must be weighed in and recorded at Ritter's Hardware Store, Mechanicsburg, Pa., in the presence of two witnesses. No entries taken after 6 o'clock except Saturdays.

Here Are the Prizes

Your Choice:—

One of these Fly Rods. Donated by your association.
Steel Rod.
Bamboo Rod.

Or:—

Automatic Fly Reel. Donated by Ritter's Hardware Store.

Or:—

Telescopic Steel Rod. Donated by Bernie's Sporting Goods Store.

Winners of 1st, 2d and 3d prizes may take their choice of the prizes in the order of their prize standing.

Be a true sportsman and return your small fish carefully. Lose a hook and save a fish.

"If you would *catch* more fish—*kill less.*"

It is advisable to dress a bamboo fly rod with a good grade of floor wax at least twice a season to insure the varnish finish against bumps and weather conditions.

Fishing Licenses Revoked by Board

Under the provisions of the Act of May 2, 1925, and the amendments thereto, the Board of Fish Commissioners at one of its regular meetings, revoked the fishing licenses of the following persons until after the date given below, and no licenses are to be issued to such persons until after that time.

Name	Address	County in Which Violation Occurred	Revocation No.	Effective Until
Charles Kerstetter	Lemont, Pa.	Centre	6	April 1, 1937
Lester Kerstetter	Coburn, Pa.	Centre	7	April 1, 1937

Osprey or Fish Hawk

ADVANCES SOUND ARGUMENT FAVORING PREDATORY BIRDS

It is increasingly apparent that we are in need of more thorough knowledge concerning the inter-relationship of fish-eating birds, fish-eating reptiles and fish life. In line with this problem, we quote a recent letter from Richard H. Pough, an official in the National Association of Audubon Societies, which we feel is not only timely but worthy of the consideration of all anglers interested in the future of our fishing. His letter, which follows, constitutes a strong argument in favor of the heron and bittern:

"As I recall, I promised you that I would send you what information I had available on the subject of birds that ate snakes, this being apropos of your statement that watersnakes were the worst enemy of young trout that you have.

"I find in W. L. McAtee's recent circular published in the Department of Agriculture's bulletin. "The Food Habits of Common Hawks," that he says that snakes form a rather stable article of food for the Broad-winged Hawk, and occurred in thirty-one of the stomachs examined by them, which was one-fifth of all the stomachs exhibited.

"Of the Red-shouldered Hawk, he says it is generally acknowledged to have a strong taste for amphibians and reptiles, and that this reputation was fully substantiated by the stomach contents. Of the Marsh Hawk, he says, it appears to take snakes when the opportunity offers, seventeen of the birds reported on having contained snakes.

"I also find that in the paragraph devoted to the food habits of the different Bittern and Heron, in various publications in which they are discussed, watersnakes seem to appear in almost every case as a fairly stable article of diet. If this is true, and it is equally true that the watersnakes are a serious enemy of young trout, while we know that the Herons will take almost anything (including a few trout), but as well frogs, etc., it may be that if we knew the real facts about the ecology of these birds, we would find that in the final balancing up of the effect of their various food habits, they would be found to be beneficial rather than detrimental, at least so far as conditions are concerned in the wild state.

"As far as the Hawks are concerned they are almost a negligible factor today, as a result of their almost complete extermination throughout the state as a result of the activities of misguided sportsmen, and the lack of legal protection.

"It seems to me that it is not too much to assume that, if watersnakes are today seriously detrimental to game fish, that some natural enemy of the watersnake that formerly kept it in check has been so seriously eliminated as to leave the watersnake without check, and therefore capable of doing excessive damage. You know, as well as I do, that before the coming of man the watersnake and the trout existed side by side, if not exactly in a harmonious relationship, at least in such a way as to not unduly influence each other; therefore, it seems to me the real solution of the problem today is to restore the natural condition that once occurred, and let nature's automatic checks continue to function. This is far more satisfactory, and far less costly than having to continue a warfare on first one species and then another. Nature seems to have been able to preserve fairly stable populations of every form of wildlife, without undue increase or decrease until man came on the scene and started upsetting things."

MAKE BANNER CATCH IN WALLENPAUPACK

While fishing in Lake Wallenpaupack near Mt. Pocono, reports the Field and Stream Association of Lebanon County, Mr. and Mrs. Harry Miller, Miss Lillian Knox and Walter Collins, all of Lebanon, caught 11 bass and 3 pike having a total weight of 37¾ pounds. The bass measured from 15 to 21 inches in length, the pike were 21, 23, and 27 inches long. The people of Mt. Pocono claim it was the largest catch taken away from there this season. These anglers want to thank the Board of Fish Commissioners for the well stocked condition of waters of Pennsylvania, the Association said.

RECKON I ain't ever seen our mountain runs an' the big crick lower than they be this year. Ef ever the watersnake an' every other varmint thet kills fish hed an easy time o' it, they sure hev this summer. Jest a short time back, I headed up along the trout run ter sort o' look things over, an' I killed four watersnakes. The biggest un hed a fair size bulge in him an' when I cut him open there was a mighty purty spreckled trout, all o' ten inches long. With the water so durn low, them ugly-lookin' critters o' watersnakes sure lives good. The boys around this neck o' the woods is doin' their part in killin' snakes agin this year, an' I reckon we'll be helpin' the trout no end.

Jest recent, I watched a powerful big watersnake a-fishin' on the big crick. I hed gone up ter the sunny hole, an' from where I was I saw this here snake slip inter the water from an old pile o' brush. The crick was nice an' clear, an' I could see the critter plain. Its head just stuck up out o' the water fer a minute er so, then it ducked under an' from the high bank where I was sittin' I seen it movin' close ter bottom. Sudden like, it nosed under a big rock about ten feet from the bank. Not more'n a minute later, out comes mr. snake with a fish in its mouth, an' I could see it was a big stone cattie. The snake swum right back ter the brush pile an' thet was the last I seen o' it. Well, ennyhow, since I know how wide one o' these critters kin stretch its jaws fer a meal, I figger thet cattie was in the snake's belly afore long.

WHO SAID "NO TROUT"?

For those anglers who have declared this year that the trout just aren't around any more, the following letter from an expert fly fisherman and fly tyer, Lewis E. Jones of Lehighton, should serve as a good tonic. Lew wrote this letter on June 22:

"Just a bit of interesting news for Fish Commission critics. To date, I have caught and released this season 441 trout of legal size, from 6 to 10 inches, not to say anything about the little fellows under 6 inches. I keep an accurate record each fishing trip and this is honest count. Never use live bait, and I think we should have a law prohibiting its use. I want to commend the Fish Commission on their untiring efforts and the wonderful service they are giving the fishermen for their $1.60 license fee."

Opening Day of Trout Season on Little Lehigh Creek, Lehigh County

WET FLIES

We've just had the pleasure of looking over some mighty fine wet flies tied by Bert Boxe of Lewistown. Eighteen standard patterns of flies, including a number of the popular quill variety, comprised the group. Bert also has devised an artificial May fly, commonly termed shad fly on central Pennsylvania waters. He gets a great kick out of fly tying during the winter months, and later tries out his creations on streams in the vicinity of Lewistown.

LIVE TROUT CONTEST FEATURES LEHIGH MEET

Featured, as has been the case ever since the inauguration of these annual picnics several years ago, by a live trout fishing contest, the Lehigh County Fish and Game Protective Association held its mid-summer outing at Dorney Park, near Allentown, on Saturday, July 25th, with an attendance of several thousand sportsmen from all over eastern Pennsylvania and other interested spectators.

Over one thousand brown and rainbow trout, measuring from 12 to 25 inches in length, were impounded in a 300-foot stretch of Cedar Creek and for nearly six hours, the association's anglers to the number of 190, engaged in a lively battle to catch the largest number of fish in a ten-minute period, and also for landing the largest trout. Nineteen groups of ten each, competed and when it was all over, it was found that Louis R. Albright, Jr., of Allentown, had won the prize for catching the most trout in his period. He caught eight nice ones—almost at the rate of one a minute. Joe H. Mellon, of Philadelphia, State fish warden, and Ernest R. Benninger of Bethlehem, were tied for the largest fish, each landing a 21-inch brownie. The prize of five dollars was divided between them. Under the rules barbless hooks were used and the fishermen were permitted to keep only the first fish caught in any given period. Mr. Mellon also caught a beautiful twenty-inch rainbow which was his finest trophy for the day. The increasing interest in this contest is shown by the fact that last year there were only 78 entries as against nearly 200 this year. Mr. Mellon also gave an exhibition of fly casting as it should be done under natural conditions along the stream.

There was a large field of competitors in the fly casting contest in which F. Al Brown won first prize for accuracy with an average of 85, while Richard Wagner won the prize for distance with a score of 63 feet.

Melvin Werkheiser won the balloon shooting contest in which he had a perfect score, breaking the five balloons with a .22 calibre rifle.

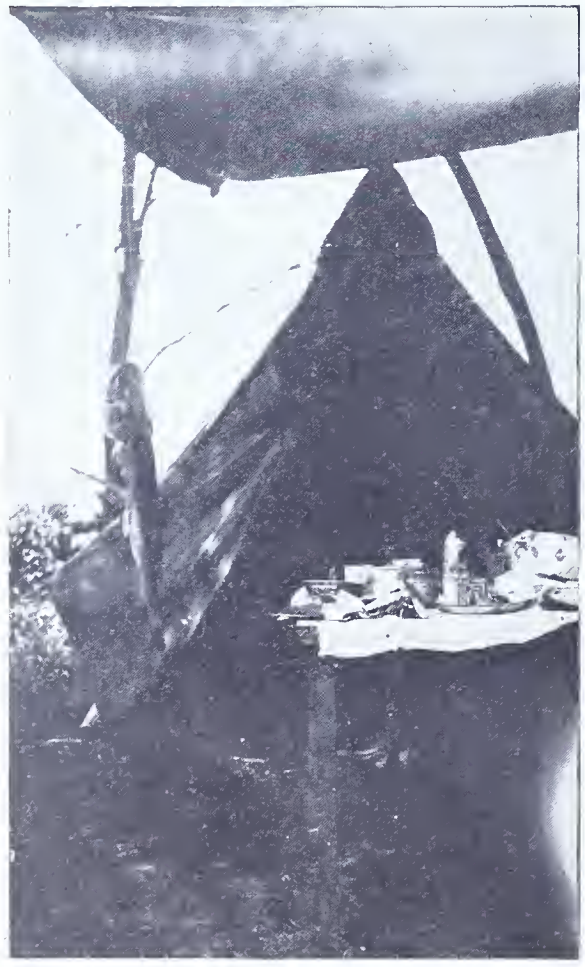
Young Largemouth Bass

FISH BONES CHOKE BIG PICKEREL

With reference to the accompanying photo, Paul W. Beechert, Reading angler, writes:

"I am not so familiar with writing stories of any kind, but will try to give you some idea as to the story connected with the picture of the fish shown on the accompanying picture. While camping along the Juniata river near Millerstown during the month of August, 1928, we were fishing at all times during the day and also at night. On this particular morning, while fishing along the bank, I noticed this fish lying in a deep hole near shore. Not wishing to undress to get him, I motioned to two of my pals, who were out in a boat at the time, to stop on their return to try to secure the fish for curiosity's sake, and to determine what killed him.

"Well, they picked him up on their return to camp for noon lunch. We had it at camp and had all kinds of fun with the cook about this big fish, took pictures of it, and after everything was said and done, I decided to find out what had killed it. Upon investigation, I found that right in its throat were two skeletons of two fish it had attempted to swallow or tried to extract from its stomach, one skeleton head pointed out, the other in. We came to the conclusion that it died of strangulation. The pickerel measured 21½ inches in length.



"Our party consisted of Allen Ford, Irvin Christman, John McWay and the writer."

Seeking The Elusive Trout

By Wm. Arthur Borland

Fine Brown and Rainbow Trout Water

IF THERE is an art more fascinating, more seductive than that of enticing brook trout from its native haunts by means of bright, dark and mottled feathers attached to a small hook, it is not known to us. It would appear from long observation that this art, requiring as it does much patience and much perseverance and inviting also keen disappointment at times, cannot be acquired readily by mature men. A boy is inducted into it by endeavoring to follow the footsteps of a master and once its principles are grasped, the lure of the art is so strong that nothing will take its place.

Anticipation is always less disappointing than realization; but if the venture proves a failure, one is convinced that the trout were lazy or the water too warm or the wind too strong to permit excellent casts. There will come a time, however, when all the conditions requisite for good catches will prevail. If not a single trout rises to any of the beautiful feathers skilfully tied to resemble flies, it does not necessarily prove that there are none in the stream. Sometimes failure is due to poor casting. Caution, quietness and even the gentle handling of a flexible rod are essential as we all know who have tried our skill in capturing a fish that shows a decided reluctance to leave its element. Pussyfooting is always desirable, for clumsiness of all kinds is many times responsible for the homecoming with an empty creel. Trout undoubtedly scurry to their holes when they detect the silhouetted figure of a man. But if a number of pools are unproductive, there is always one beyond whose indications lead an ardent disciple to believe the taking of a chance is worthwhile.

Nietzsche, in his atheistic philosophy, lays stress upon the fact that in the attainment of any object there must be no deviation from the direct path; and, so the fisherman with this axiom firmly fixed in his mind, wades the stream, casts his flies in all likely spots until darkness calls a halt to his activities.

We journeyed to a rendezvous of fishermen and hunters in the vicinity of Blakeslee Corners, and when we arrived we learned that many of those present had tried their luck in the Tobyhanna and the Tunkhannock and were thoroughly disgusted. Despite the fact that the proprietor of the hotel claimed that two weeks previous he had caught eighteen brook and two brown trout, his remark was viewed with considerable skepticism. One angler stated that if he had caught that many, he evidently had captured all the streams contained.

Overwhelmed with anxiety for fear of lingering in bed too long, a sleepless night was spent, with much complaint about the heat, though the outside temperature was only 45 degrees. A hurried walk down the road and through the woods brought us to the Tunkhannock, which was fished to the Tobyhanna, continuing along that stream for some distance. It was an exhilarating venture that brought forth no results so far as trout were concerned.

The following morning all of the fishermen decided that there was little use to spend further time on the Tobyhanna or the Tunkhannock and they drove to Stoddartsville, fishing the Little Lehigh for brown trout. During the same afternoon, we thought that perhaps if that portion of the Tobyhanna above the road were tackled we might strike one or two stray fish. As we stepped into the water, a young man, well dressed and armed with a heavy steel rod and a can of worms said:

"Pardon me, I am trying to find a way up this creek so I can stand on the bank and fish. Can you direct me?"

"You have to wade the stream. There is no other way."

"Is that so? Well, I told my wife I was going fishing and if that is the way it must

be done, I shall do it." he remarked as he rolled up his trousers showing silk socks of a deep lavender shade held in place with blue garters.

"I don't know much about this kind of fishing."

"My results so far lead me to suspect that there is lots to learn."

We waded up stream, slipping now and then on the moss-covered rocks and reached a pool where the limbs of two birch trees overhang the water. The well-dressed fellow placed a fat juicy worm on his hook, deposited his can on the east shore and waded to the middle of the stream. Our frequent casts produced nothing. Suddenly a piercing call was heard—"Say, what kind of a fish is this, with stripes on it?" A little later there came another yell from the gentleman who was standing in water above his waist line: "Say, I got a funny-looking fish now. It is full of specks. What is it, anyway?" Think of hooking a ten-inch trout with a worm and not knowing what it was! The fish struggled as he jerked it towards him and as he reached for it, it dropped into the water. "Oh, he went away," he called. An indescribable feeling came over us and we proceeded around the bend so as not to be annoyed further by heart-rending scenes of this kind.

However, if efforts for the better part of the afternoon were disappointing, we were still hopeful. The well-dressed but inexperienced fisherman had proved that the Tobyhanna had within its confines one trout and undoubtedly his companions were lurking in some quiet spot. As we continued up the stream, a deep pool shadowed by a willow tree was noticed. A seared leaf blew from the tree and before it touched the water, a trout made a leap for it. While waiting for the undulating water caused by the fish's splash to subside, we replaced the tail fly with a Yellow May. One cast and a fish—it weighed a pound and a half—took the deftly concealed hook and started up stream. Repeated casts with the same fly brought no further results. As this pool had more possibilities, at least in our estimation, we were reluctant to leave it. The sun was gradually sinking in the west and when a dark cloud completely obscured it, we took a chance with a Paramachene Belle—a fly that resembles no insect we have ever encountered in our entomological studies. Moving slowly to the upper part of the pool, we cast down stream, reversing our former procedure. And before darkness fell, we had netted exactly six trout, none of which was less than ten inches. We had the satisfaction of knowing that the tannin-stained Tobyhanna, despite all the maledictions hurled against it by unlucky fishermen at the hotel, was the home of the elusive trout which could be lured from it if a fisherman strikes the right combination—water and weather conditions with the fish in a mood (if fish have moods) for taking a chance with what is offered to them.

Trying the Commission's Boys' Fishing Pool at the Spring Creek Project

SPORTSMEN OBSERVE FIRST ANNIVERSARY

Definite Action Taken to Control Stream Pollution in Montgomery County

H. M. Wight, of Michigan, conservation-scientist, highly commended the Montgomery Federation of Sportsmen, who gathered in Memorial Park, Schwenksville, on the evening of July 20th, on the progress made in such a short time.

Mr. Wight is in this section at present to study pheasants for the State Game Commission in assisting in a project, which is mostly experimental, in game preservation. He described briefly his duties and intentions in the way of game preservation.

Burd P. Evans, of Trappe, spoke on the matter of trespassing and stressed the need of further legislation to protect the farmer and also benefit the sportsmen in this matter. Mr. Evans outlined the old law of April 14, 1905, and showed how inadequate this law is and how expensive a proposition it is to a farmer in order to comply with the ruling so that he has full protection in order to prosecute. He urged the sportsmen of the county to help by mailing any worthwhile suggestions to him in order to prepare a bill for legislation which will help both sportsmen and farmers.

After lengthy discussion by club members on stream pollution in Montgomery County, it was unanimously decided that the Federation of Sportsmen should take steps in order to preserve, not only the fish in our streams, but also to protect the beauty of our stream banks in this county. This organization of sportsmen will distribute signs to be placed along creeks in the county to help curb "careless minded citizens" in dumping rubbish and garbage into the streams. In order to clamp down on such violators the sportsmen, in particular, are urged to report any such violations and help bring those persons, responsible for such acts, to justice. This stream pollution must be checked NOW and all should feel the responsibility to do their share in this matter.

Mr. Brouse, the State Forestry supervisor of Montgomery County, was present at this gathering and spoke on the work being done at the Eastern State Penitentiary in regards to tree propagation beds. Mr. Brouse stated this work would be well under way by fall.

These propagation beds are most beneficial to the educational value to convicts of the penitentiary, according to Mr. Mills, Agricultural Instructor of the Eastern Penitentiary, who was also present and spoke briefly on the benefits received by the inmates on this project.

According to the report by Harry Cole, local fish warden, the projects for further stream improvement and flood control have been delayed. The Salford Dam has been completed and work has been curtailed until other projects receive the sanction of PWA headquarters. In order to secure further action on proposed projects a committee has been appointed to call upon Mr. Dunlap, who has charge of the PWA workings in this county, to persuade him to rush these particular proposed projects while the weather is suitable and to do the work which is necessary.

Mr. Gerhart, local game protector, reported that during the past year $2012 was paid sportsmen as bounty in Montgomery County and stressed further control of vermin—especially the "wild house cat," throughout the county. Mr. Gerhart also urged sportsmen to build shelters before the cold weather arrives and place feed there frequently so that the birds may know where to find protection and food during severe cold weather. According to Mr. Gerhart's report a liberal amount of game, including pheasants, quail, rabbits, gray squirrels, and raccoons, were released in this county and the game should be numerous in this locality next fall.

Robert Kaler, of Hatfield, presented the Montgomery Sportsmen's organization with a beautifully mounted brown trout, to be

placed in their permanent meeting hall which is to be chosen in the near future.

The Lansdale Sportsmen's Association was accepted as a new member in the Federation at this meeting.

The organization celebrates its first anniversary and can look back with great satisfaction on the work which has been accomplished since that time. They organized in Schwenksville last August and now there are thirteen Sportsmen's Clubs as members of the Federation, ten of which were well represented at this gathering.

The next meeting will be held in October with fellow sportsmen of the Souderton Club at that place.

BASS SEASON OPENS, PICNIC POSTPONED

From Berks County, one of Pennsylvania's most active salients on the fishing front, comes real news. It seems that July 1st found the Maxatawney and other bass waters calling so irresistibly that it was necessary to postpone the outing of the Lutheran Pastoral Association, of Reading, scheduled for that day. Over 100 acceptances for the ministers' picnic had been sent in. Originally scheduled for the week before bass opening, it was necessary a second time to call off the outing, and it has been suggested that some time following November 30th, when bass season closes, be chosen for the affair.

Not only the ministers, but business and professional men in large numbers turned out for the opening day invasion of the bass streams.

They take their fishing seriously in Berks County, and more power to 'em.

PIPE LINE BLAST FAILS TO HURT BASS FISHING

It was necessary to blast for a pipe line in the Susquehanna River near Middletown on June 28, but even the concussion of the shots failed to upset the bass sufficiently to prevent their striking in that vicinity on opening day, July 1, according to Warden Frank Sanda of Steelton.

Fishing in that immediate vicinity on the first day, Frank Etter of Highspire and Bing Ney of Highspire made fine catches from the Susquehanna. Etter caught 9 bass, 2 largemouth and the rest smallmouths, the largest weighing 3¼ pounds, and the others ranging in length from 10½ to 15 inches. Ney scored with 7 bass, all smallmouth, and next day reported 8 more. The fish ranged in length from 10 to 16 inches.

Other catches made in the vicinity of Harrisburg were Ed Duncan, Highspire, 8 bass, 10 to 15 inches, on the first day, and 5 bass next day from 9 to 15 inches. Floyd Watson of Steelton made a varied catch on opening day at Hawk Rock, famous deep water in the Susquehanna near Harrisburg. He landed 3 bass, 12 to 15 inches, a fallfish 14 inches, and an eel weighing 3½ pounds.

Crayfish or crabs were found to be most effective on the first day in this vicinity, many of the fishermen peeling them.

Photo from Oil Painting owned by Edgar W. Nicholson, Fish Commissioner.

Trouting Action

Waitin' for a Bite. A Splendid Photographic Study of Children Fishing. Taken by La Mar Mumbar on the Perkiomen Creek.

VENANGO SPORTSMEN PLAN GIANT RALLY

One of the outstanding sportsmen's events in the east is scheduled to be held next month.

The Venango County Rod and Gun Club will hold their Field Day this year at Bullion Harvest Home Grounds, 12 miles south of Franklin, Venango County, Pa., on Saturday, September 12, the Saturday following Labor Day. Events for sportsmen will be held in all branches of sport. Pistol, rifle and shotgun events will be shot. Trap and skeet will, of course, be in order. Bait and fly casting events will be held with keen competition in every branch. The Venango County Rod and Gun Club enjoys the reputation of putting on the largest field day of any club in the State of Pennsylvania and always has something new for the sportsmen and their families. Coon, rabbit and bird dogs will go to their events in the best shape this year, than any year in the past. Committees are working, the grounds are rounding into shape and everything going forward for the biggest day this organization has ever held. Sportsmen and their families are most welcome. Join the throng.

ABUNDANT BASS FOOD IN ALLEGHENY RIVER

While eatches of bass in the Allegheny River so far this season have not been as large as expected, writes Warden R. C. Bailey of Youngsville, this can be attributed to the fact that the river is literally teeming with natural food. The bass are there in large numbers, he says, and good autumn fishing is anticipated.

Conewago and Brokenstraw Creeks in Warren County are both yielding exeellent eatches of bass, with those being taken from the Conewago well above the average in size.

BLAWNOX SPORTSMEN EAT SNAKES

The Blawnox Sportsmen's Club had a rifle shoot and feed at their clubhouse, 392 Freeport Road, last month.

The high shot was Harry Roberts, contractor of Montrose Hill. After the shoot, the steward, George Walzer, served broiled rattlesnakes. Some of the members refused to eat, but when they saw the others eating them and not falling dead they also tried and all enjoyed the snakes and refreshments. There are no reports of snake fatalities to date.

BOARD OF FISH COMMISSIONERS
HARRISBURG, PA.

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HERE AND THERE IN ANGLERDOM

Johnny Day, Harrisburg, Caught This 3 pound 7 ounce Smallmouth Bass in Sherman's Creek, Perry County. Lure used a Helgramite

The Perkiomen Creek in Montgomery County lived up to pre-season expectations this year on opening day, according to Warden Harry Cole of Norristown. Included in first day catches on this popular southeastern Pennsylvania stream was a 17-inch bass weighing 2 pounds 4 ounces. It was taken by Charles Smith of Pottstown.

Ben Givler of West Fairview, Cumberland County, scored with 10 fine smallmouth bass in the Susquehanna on opening day. The largest bass in the catch measured 15½ inches.

A hefty smallmouth bass, 17 inches in length and weighing an even three pounds was taken early this season from the Susquehanna River near Millersburg by Frank Meck of Millersburg.

Six Mile Run, in Centre County, provided some good trout fishing this year, according to Warden Dave Dahlgren of Philipsburg. Fifteen brook trout were taken on July 11th, by Adrian Parrish of Loretto, while Charles Bengelle of Loretto, landed 10 brookies and two suckers. Gust Swanson, of Lanse, caught a 21¾ inch brown trout weighing 3¾ pounds in Spring Creek on July 10th.

First day bass fishing this year was marred to some extent by muddy waters following heavy showers on the watershed of the Allegheny River, according to Warden R. C. Bailey of Youngsville. One hundred fishermen contacted on the Allegheny between Irvineton and Trunkeyville had a combined catch of 78 black bass, 29 rock bass, 6 carp and 11 suckers.

Although slightly cloudy early in the season, the popular North Branch of the Susquehanna River yielded some first rate catches of smallmouth bass, according to Warden Myron Shoemaker of Laceyville. Eugene McCracken, of Towanda, scored with a 16-inch smallmouth weighing 2 pounds at Echo Beach. Two 15-inch bass were landed by Bob Desenberg of Towanda. A smallmouth measuring 16 inches and weighing 2 pounds 6 ounces was landed by Ashton Merrill of Towanda. Charles Danneman, of Towanda, caught a 19-inch wall-eyed pike.

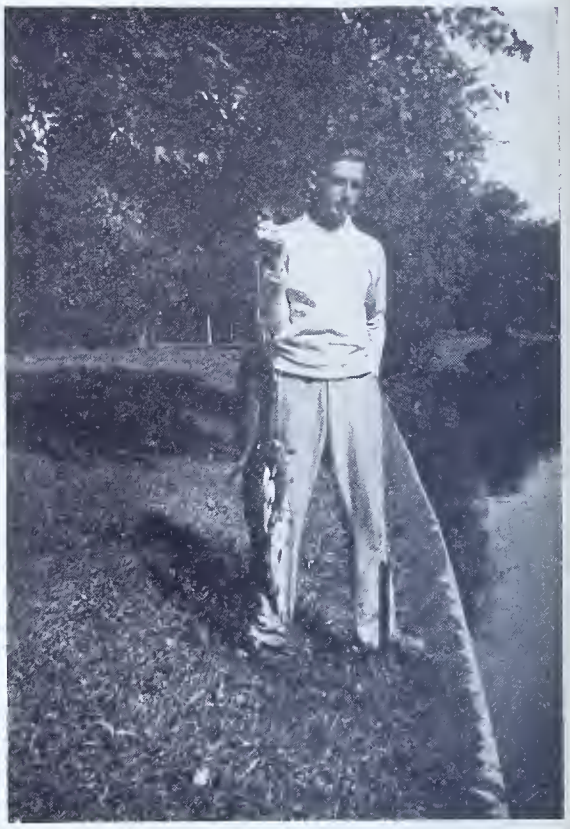
Two fine brown trout were taken in June in Valley Creek by Chester County anglers. James Pinkerton, of Frazer, caught a brown trout measuring 22½ inches and weighing 3 pounds 4 ounces, while another Frazer fisherman, M. McCardell scored with a heavy brownie measuring 21¾ inches and weighing 4 pounds 6 ounces.

One of the finest largemouth bass reported to date was taken early this season by Dick Weisgerber, of Connellsville. Weisgerber landed the big fellow in Bridgeport Dam, Westmoreland County. It was his second whopper of the present season, as he caught a 21-inch largemouth on the opening day that weighed 4 pounds 6 ounces.

Fishing plug in the Latrobe Reservoir, Westmoreland County, Glen Blansett of Latrobe, caught a 19½-inch largemouth bass on the opening day of the season.

A brown trout, 21 inches in length and weighing 4 pounds, was caught recently in the famous Loyalsock Creek, by Bill Smith of Shenandoah, according to Warden Anthony Lech, Shenandoah. Lech also reports that Joe Saures of Shenandoah landed a 16-inch brownie in Fishing Creek, Schuylkill county. Walter Naja of Shenandoah, fishing fly in the Little Tobyhanna, scored with 13 trout from 9 to 12 inches in length.

From Warden Charlie Long of East Waterford, Juniata county, comes word of fine catches of bass in central Pennsylvania bass waters. Herb Watts of Huntingdon tops the list with a largemouth bass 24 inches in length and weighing, dressed, 3½ pounds. Herb caught it on a bucktail while fishing in the Raystown Branch of the Juniata River. George Kauffman of Mifflintown has been taking some mighty nice smallmouth bass from Juniata streams this season. His largest fish, to date, measured 15½ inches. G. A. Corselios of Huntingdon scored on July 2 in the Raystown Branch with a smallmouth bass measuring 19½ inches. On opening day of the season for wall-eyed pike, Kenneth Walthower of Huntingdon landed a pike measuring 28 inches in length. We did not hear the weight of this whopper, however.



Bob Stover of Hanover Exhibits a Varied Catch, Two Eels, 5 Catfish and 4 Suckers From the Big Conewago Creek in York County

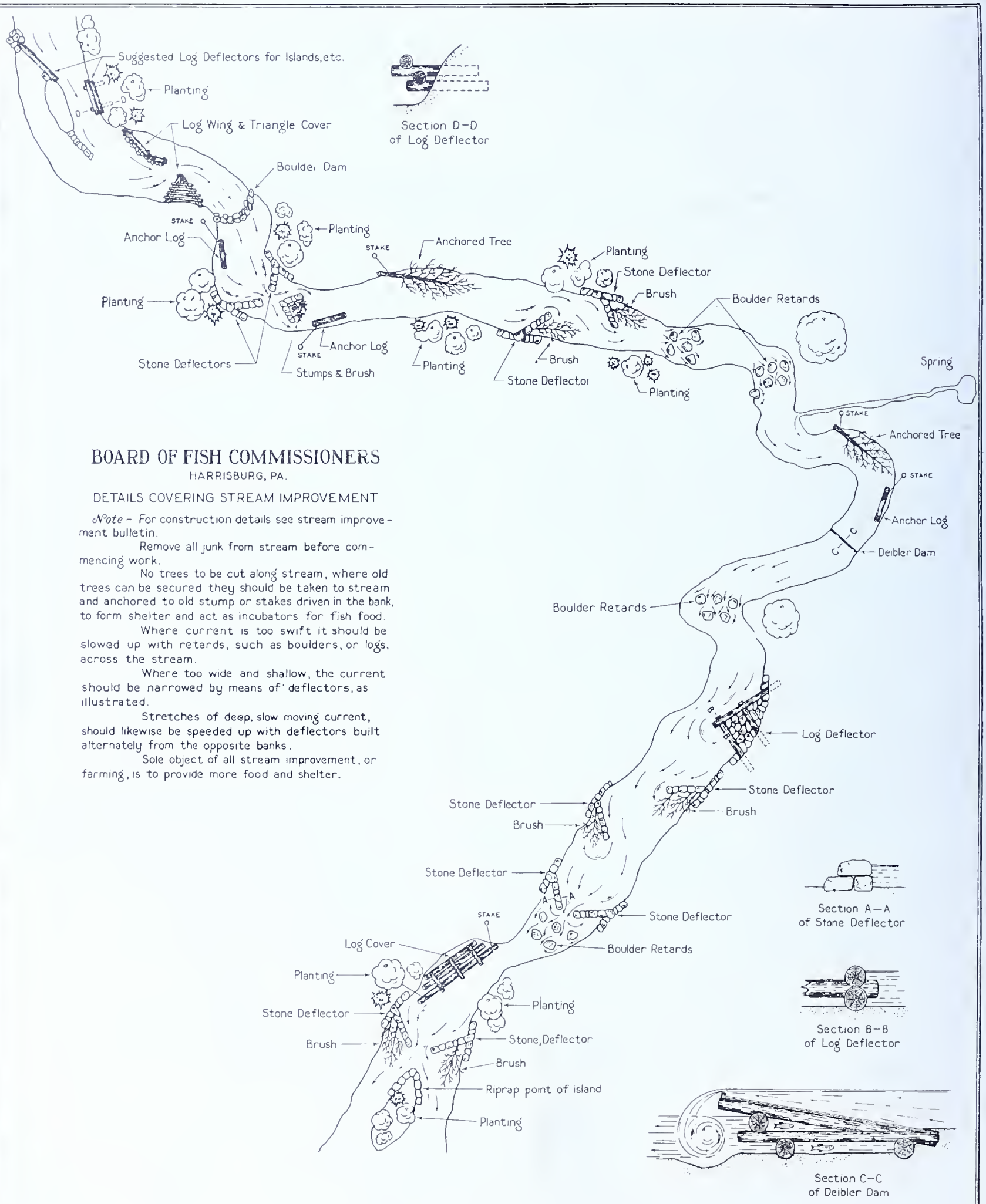
FOUR-POUND SMALLMOUTH

From Warden Harry Moore of Bedford county comes word of some fine central Pennsylvania smallmouth bass catches. Fishing in the Raystown Branch of the Juniata, John Pepple, of Bedford, caught a smallmouth measuring 20 inches in length and weighing four pounds. Another big smallmouth from the Raystown was taken by H. P. Barringer of Martinsburg. It measured 19½ inches and weighed 3 pounds 8 ounces.

Charles Bonebrake of Martinsburg caught two smallmouth bass, each 14 inches in length, while C. E. Sipes, also of Martinsburg, scored with 7 smallmouths ranging in length from 13 to 14 inches.

Courtesy—New York Herald Tribune

The Boy Who Made Good



BOARD OF FISH COMMISSIONERS

HARRISBURG, PA.

DETAILS COVERING STREAM IMPROVEMENT

Note – For construction details see stream improvement bulletin.

Remove all junk from stream before commencing work.

No trees to be cut along stream, where old trees can be secured they should be taken to stream and anchored to old stump or stakes driven in the bank, to form shelter and act as incubators for fish food.

Where current is too swift it should be slowed up with retards, such as boulders, or logs, across the stream.

Where too wide and shallow, the current should be narrowed by means of deflectors, as illustrated.

Stretches of deep, slow moving current, should likewise be speeded up with deflectors built alternately from the opposite banks.

Sole object of all stream improvement, or farming, is to provide more food and shelter.

PENNSYLVANIA ANGLER

Rana Looks
Things Over—
A Bullfrog
at Home

PHOTO BY
LA MAR MUMBAR

SEPTEMBER
1936

OFFICIAL STATE PUBLICATION

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Vol. 5 No. 9

PENNSYLVANIA ANGLER

SEPTEMBER, 1936

WHAT IS BEING DONE ABOUT STREAM POLLUTION

By GROVER C. LADNER
Deputy Attorney General and President, Pennsylvania Federation of Sportsmen

SPORTSMEN need not be told that stream pollution is a long uphill fight. On the one side is arrayed special privilege, selfish interests and money power; on the other side the decent right-thinking citizenry of the State and Nation who are fighting this battle of the ages not merely for themselves, but for those who come hereafter. Between the two is the great mass of people, who, fortunately for the polluters, have not yet been fully aroused but are not to be considered in any wise as supporting the polluters.

Ask the average citizen whom you meet what his opinion is about stream pollution. In ninety-nine cases out of one hundred he will express his disgust and say it should be stopped, but unfortunately he does not feel called upon to take an active interest.

In the vanguard of those who wish to suppress this evil are to be found the sportsmen, not because they have any selfish interest to serve, but because their love of the outdoors brings them most frequently in contact with the horrors of the situation.

Friends of clean streams need not be dismayed at the situation, for every sign shows that the great mass of indifferent citizens is slowly but surely being aroused. Impatience at further toleration of this evil is becoming daily more manifest, and the sportsmen can do much to help in its development.

The greatest forward movement toward the suppression of stream pollution resulted from the election of Governor Earle. He made the abatement of stream pollution one of his issues. He has not changed his mind. Great progress has been made, but not the progress that has been expected, and the reason therefor is the purpose of this article.

In reviewing accomplishments, two things must be borne in mind—the size of the problem and the limited facilities available to cope with it.

The size of the problem becomes manifest upon realization that 85,000 of the 100,000 miles of waterway are polluted and need attention.

When the Earle Administration took office, we had no illusions concerning the immensity of the task and knew the impracticability of safeguarding the clean streams and making much progress toward reclaiming the ruined ones with the limited facilities available.

For this reason, our first effort was to draw up a program of legislation which would enable us to effectively tackle the problem. The main part of this program was two pieces of legislation. One was the Pure Streams Bill No. 273. The other was the Ruth Bill No. 323 increasing the penalty for destruction of fish by pollution.

The Pure Streams Bill, Senate Bill No. 273, briefly explained, re-enacted the Purity of Waters Act of 1905 relating to sewage and extended the provisions to industrial polluters. It included a provision designed to multiply the enforcement agencies by enabling the local communities to assist in the work of cleaning up the streams. By thus enabling officials of local communities to take a part in this program of stream clean-up, the whole burden was not thrown upon a single body.

It may be pointed out that previous administrations were committed steadfastly to the principle of concentrating and centralizing pollution enforcement in a single body —the Sanitary Water Board. This made it easy to play politics with the situation and kept that board subjected to continuous and frightful political pressure. Our plan, which advocates decentralization of power, would make that situation impossible. Previous administrations were content to use stream pollution as a political football. This administration is not.

We recognize it to be just as illogical to concentrate the enforcement of stream pollution law in a single body as it would be to attempt to enforce all the criminal laws through the medium of the State Police instead of allowing the local communities to do their own policing.

Senator Thompson, the sponsor of this bill, succeeded in having the bill reported favorably by the committee, but, at the instance of Senator Sordoni of Luzerne, backed by the other coal county senators, the bill was recommitted and killed. And this notwithstanding the fact that Section 310 exempted from its provision the coal mines.

The other bill, the Ruth Bill No. 323, amended the pollution section of the Fish Law of 1925. It was modeled along the lines of the New York law, fixing a penalty of $10.00 per fish for every fish killed by pollution.

There is no logic in punishing an individual fisherman on the basis of a fine per fish for fish illegally killed and allowing the big polluter who kills them by the thousands to escape with the ridiculous fine of $100.00.

The Ruth Bill No. 323 was extremely fair and contained a clause which safeguarded against oppression in that it provided that, if the fish killing was due to the breaking down of a plant or a circumstance beyond the control of the industry, the Board of Fish Commissioners could accept a settlement from the industry based upon the cost of restocking the stream.

This bill was passed by the Democratic House of Representatives, but, when it came to the Republican Senate, it was pickled in the Game and Fish Committee of that body.

If the sportsmen of the State want real progress made, they must supply us with the weapons by appropriate legislation. This they can do by voting for candidates to the Legislature who will vote for their interests and not against them.

The adjournment of the General Session of 1935 left us without adequate weapons to carry on the kind of a campaign that we had hoped. Nevertheless, we have done the best that we could under the circumstances. We have not been idle.

The full power of the Attorney General's Office has been exerted to prevent, first, the extension of the pollution evil, and second, to compel the abatement thereof. In most cases, we have gone after the offending industry both from the viewpoint of preventing a recurrence in the future and a prosecution for the past offense.

Eighty-nine complaints of pollution have had the attention of the Sanitary Water Board and have been satisfactorily disposed of.

Eight prosecutions have been advised under Section 200 of the Fish Code, and the following are the results:

(Please turn to Page 12)

WHAT COLOR FISH?

By FRED EVERETT

Sketches by the Author

WHEN one happens to be an artist who paints fish, he is in for a lot of criticism, no matter how careful he may be to be authentic in every detail. What such an artist needs most is a life-preserver alibi and that is why I'm writing this article for you Pennsylvania anglers. I hope that the sportsmen of at least one state will understand what I am doing when I make a painting of a fish and it doesn't look at all the same color as the fish in their own waters.

The funny part of it all is that I am right and when you say I am wrong, you are right, in fact we are both right and wrong —depending on our viewpoints.

One day this spring I had the extreme good fortune to be the guest of Commissioner Deibler and Chief Fish Culturist Buller on the Spring Creek Project, where I went to do some investigating of the project and make some paintings of the trout for the American Wildlife Institute. Part of one afternoon Ye Editor of this magazine helped me catch specimens for paintings. Every few minutes he would call—"Hey, Fred, here's a beauty, will he do?" And I would have to disappoint him by saying, "No—he hasn't enough color."

Nor did we find any trout that had the color I was looking for. Now, you may ask, what color was I looking for? And to be perfectly honest, I can't tell you exactly, except that, as an artist, I have had to build up my own ideas of what colors are most generally accepted as true in each kind of fish and then set out to find one having that color.

For example, let's take the native brook trout and discuss its coloring. What color do you think it should have? Well, those of you who fish the limestone waters, like Spring Creek, will say the general tone will be a medium dark green back with dark grey markings, a light silvery green and blue iridescent side spotted with cream dots and a few red ones, the fins being somewhat orange with black and white forward edges, the dorsal fins and tail being amber with black markings. (See Fig. No. 1)

And you would be right. But we who fish mountain streams free of limestone or calcium, such as those in the Catskills, would say you never saw a native trout. Why? Because in such streams the native trout has a dark rich green back with black markings, the fins are deep orange with black and white forward edges and the sides at the belly are either orange or deep red with a smattering of black, while the red spots are in brilliant blue settings, the dorsal fin and tail being reddish brown with black markings. (See Fig. No. 2)

These are only a few of the variations in the coloring of these trout. One would swear that they are two distinct types of fish, yet they may be exactly the same fish and, if they were exchanged in the waters, might also exchange their coloring. Note I say might, because this may happen but at times, may not.

This question of color is a mighty elusive thing and no one can say for sure just what causes these changes. Yet we who have made a study of the changes know that many things enter into the causes and some of the changes can be effected at will.

Let us take light, which has a decided influence on color. Have you ever noticed that the trout you catch out of the same stream, yes, even the same pool, vary a great deal in color? If you haven't, then watch the next time you go fishing—that is, if you catch any trout! Catch one from the open part of the stream, such as the middle of shallow water and see if it isn't very light in color. Now catch one from under a deep overhanging bank or in a dark section under heavy foliage where little sunlight can reach the fish. This fellow will be much darker and richer in his coloring.

Why is this? Well, one reason is the fact that sunlight takes out the color from a fish, the stronger the light, the lighter he becomes. Most people call this protective coloration because out in the sunlight a dark fish could be easily seen while in the deep shadows a dark fish would be difficult to see while a light one would stand out clearly.

I have proven to my satisfaction that light causes this change simply by putting a native trout in my portable aquarium and leaving it in the sunlight until nearly all color has disappeared from it and it became a dull, silvery white on the sides and the back a sickly green with dark markings. Then I have covered the aquarium so that the light was completely shut out, left it for a while and found, upon uncovering it, that the fish had changed to dark, rich colorings. I have repeated this experiment with many other types of fish and find it to hold true with them all.

The color of a fish is hard to capture in a painting because of the many things which so quickly affect it. In catching models to put into my aquarium for study, I have come to learn what some of these things are, while some are still beyond my comprehension. Take, for example, yesterday. My eight-year-old daughter and I went fly-fishing for sunnies and bluegills so that we could have a couple for the home aquarium. When I first put them into the bowl and poured in water, one bluegill, which was a fine, dark color, faded out immediately, so fast you could see the color change, until he was a transparent yellowish green or amber color. The other bluegill didn't change in the slightest. I went to the kitchen for more water and returned in a couple of minutes, and lo and behold, Mr. Bluegill had regained all his color. I dumped in more water and away went his color again while Bluegill No. 2 stayed just as he was.

Experiences like these lead me to believe that to some extent, at least, a fish has some control over its color and can effect changes to suit its needs.

Another factor which causes drastic changes is the temperature of the water. Put a fish into warmer water and its color will fade immediately—you can see it go. Put it into colder water and the color will darken and grow richer. This will happen even to a dead fish as you have no doubt noticed after putting your catch in the ice box.

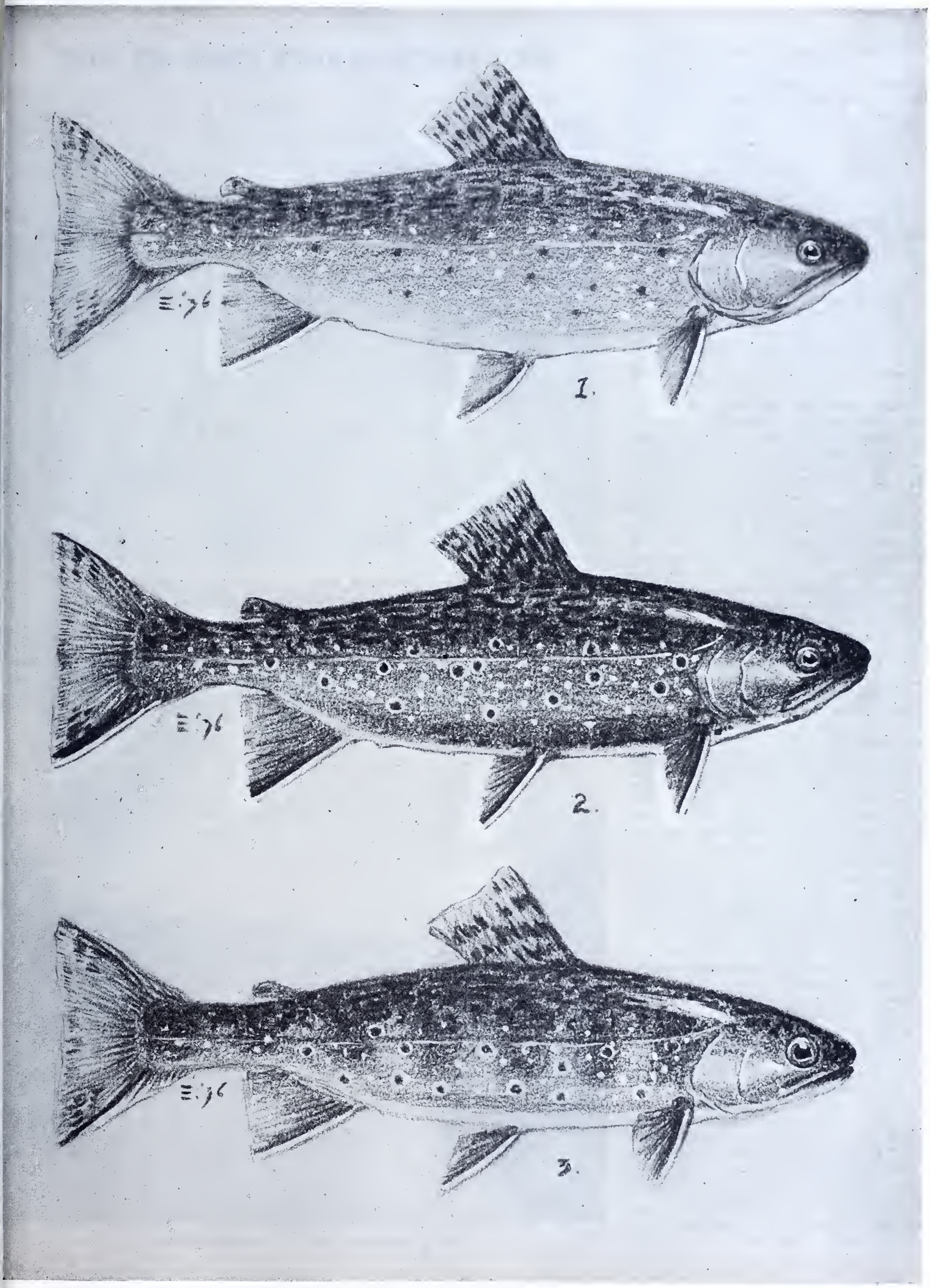
While using my portable aquarium to paint fish, it is always necessary to change the water often, even when the fish is small. The reason for this is twofold, one—to keep the fish alive and quiet (it becomes restless in bad water) and two—to retain its color. I soon discovered that, as the water became stale, that is, lost its oxygen, the color began to fade from the fish even before the fish felt the effects of the loss of oxygen and became restless. If I changed the water the instant the color began to fade, my model would remain quiet and colorful.

There are many other causes of color changes. When a man gets angry we say he gets red in the face. Or if one becomes excited or frightened, he will become flushed or pale or even "green around the gills," a condition I actually saw when two women smashed their car but escaped injury. Their faces were a sickly yellowish green for some minutes. Well, fish change color with their emotions, so much so that, before starting to paint a model, I have to let it become accustomed to its surroundings and get over the fright and excitement of being caught and put into such a small, open space. As the fish becomes restive, its color comes back and will remain normal so long as it is not scared by some sudden movement. It will even let me reach in and move it about for a better view so long as I do it slowly. It is surprising how quickly a fish understands its position and accepts it. There is enough material to write an article on that one point.

Of the other factors which influence color, I believe the mating season is the most outstanding. During the spawning time, the fish, especially the male or "buck," takes on gorgeous hues that it has during no other time. Just as the birds put on their gaudiest feathers at mating time, so do the fish change until, at times one could not recognize them if permitted to catch them off the spawning bed.

I have already spoken of the effect of limestone in the water. This is equally true of other substances, many of which cause changes in color. In many polluted streams fish may live but will be a sickly color, while in others they slowly die out, the pollution taking away the fertility of their eggs so that, while they may spawn, the eggs will not hatch. Of course, some pollution kills every fish outright.

Food has some effect on color, just how much I am not able to say. I hope in time to find out. Age is a real factor, the young fish being entirely different in color than the adult, in many cases, with distinct par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3.

markings (a series of dark patches along the sides) which disappear with age. (See Figure No. 3). Many of the colors change. In the native and brown trout the young have a blueish tone which changes to a greenish tone and even to almost a black as the years pass, the red markings changing from orange to red to darker reds or crimsons, even to browns, the yellowish sides of the brown trout growing darker to browns and greyish brown.

It is often possible to tell the approximate age of a trout by its color. Thus in streams where food is abundant, one may find large trout with young colorations, showing rapid growth, while in streams with poor food, little fish may have adult colors, showing slow or no growth.

The surroundings of a fish also affect its color, usually through its eyes. A blind fish will turn black, which must prove the eyesight has a direct influence on its coloring.

May I point out one valuable use of a knowledge of color? In making a study of a stream for restocking, catch a few trout and study their color. Are the small trout colored like adults? If so, don't put more fish into the stream, there are always too many there for the food it contains. This is true of most streams. Put in food instead of fish if you want better fishing. However, if young colors are found on big trout—go ahead and stock more fish, the stream has plenty of food.

If you will go back over the points which I have mentioned as affecting color, you will find that by looking at the color of the fish you catch, especially trout, you can determine the condition of stream, not only as to food but as to temperature, pollution, aeration, even as to whether or not you have caught the best trout in the pool, because usually the best trout owns the best cover which will be the darkest, safest retreat and he will be the darkest in color.

I have not had time, in such a short article, to go into details of the color and its changes. But I hope I have aroused your interest to such a point that after you have caught a fish and exclaimed "Ain't he a beauty!" you will go further, look him over carefully and actually see his color and the story it tells.

There are various strains of fish, all of which may vary in color the same as humans and animals. Some will be very green; in others, another color will predominate. The hatcheries, I am sorry to say, through necessity or demand, are breeding toward a lighter strain, much to my regret, because I think the darker, richer-colored fish are much prettier to look at. When I said this to Mr. Buller, he said I'm the only one who has preferred the darker strain, all others demand the lighter strain, that is why the hatcheries have to breed them.

That being the case, everybody is crazy but me! I like dark, rich colors in my fish. Do you? Or, by some miracle, am I the crazy one? Half a million Pennsylvanians can't be wrong and I'm only a New York Yankee so, where do I stand? For that matter, a fish of any other color will fight and taste the same. Surely—and smell the same. Only a crazy artist will worry about the color, anyway. But dark, rich colors do make prettier paintings!

GOVERNOR WANTS STREAMS PURE

That Governor Earle meant every word he said in his campaign pledges in regard to keeping our present clean streams pure is evidenced by the fact that he has given the Department of Justice permission to go as far as they see fit in enforcing our present inadequate pollution laws in an effort to keep the remaining clean waters clean.

Also that Deputy Attorney General Grover C. Ladner has always been in dead earnest in fighting pollution, so much so that he has gained a nation-wide reputation as an avowed antagonist of pollution, and that he means to do more than just render lip service, is evidenced by the following letter addressed to a party who was contemplating opening up a small mine on the headwaters of one of the few remaining clean streams in central Pennsylvania. This attitude on Grover Ladner's part will be received with great enthusiasm by all the lovers of clean, pure water, and it does portend better conditions for the future than what has been experienced in the past.

The old and well-established coal industry that has been in operation for many years with heavy investments in plants and equipment, can well take care of all the present needs of the coal market, so there is no need whatever from any sane point of view for opening up additional mines, especially these small so-called Wagon Mines, which naturally cut in on the established trade, and which are the cause today of polluting many fine streams, which otherwise would be free of mine drainage.

The following letter speaks for itself and merits the hearty support of our true sportsmen and conservationists:

DEPARTMENT OF JUSTICE
Harrisburg, Pa.

July 11, 1936

Mr. P. F. Stevenson,
Julian, Pennsylvania.
Dear Sir:

Complaint has been made to this department of the threatened pollution to the Black Moshannon Creek, by the proposed mining operation which you intend to develop in that region.

The Black Moshannon Creek is now a clean stream, flowing through State Forest Lands. The Commonwealth will not permit the pollution and ruination of that clean stream by mine drainage.

You are, therefore, warned that you must desist your contemplated development unless you are prepared to provide adequate means for neutralizing the mine drainage before its discharge into the Black Moshannon Creek. Your failure to give these assurances will be followed by the filing of a Bill in Equity for an injunction to restrain the threatened pollution.

Please let me hear from you not later than Monday, August 17.

Very truly yours,
GROVER C. LADNER,
Deputy Attorney General.

Lake Gordon, Bedford County, Largemouth Bass Water

FUTURE FISHERMEN

By CHARLES H. NEHF

Part of the scholars who enjoyed the opening day at the school for future fishermen as seen on the west bank of the Union Terrace Pond.

IT IS an accepted fact that each year the ranks of the already large fishing fraternity are being filled by eager recruits from the younger boys and girls of today. As such, have we ever stopped and considered the type of youth which, when of age, is to become the licensed angler of tomorrow? The question, though simple, calls for an answer which is indeed imperative.

As the number of fishermen increases, the ratio of the real sportsmen must advance in even greater proportion if angling is to become a recreational game rather than a matter of filling the creel on each fishing trip. Recruits, if desirable, must be taught while still in their pliable formative years of early adolescence.

The unforgettable companionship of father and son on the stream, lake, or pond is invaluable but how many boys and even girls, eager to go fishing, do not have the enrichment of such a guide or instructor to memorialize their early experiences? This group, by far the greatest in number, receives the least attention or consideration.

Its Founders

With such a background one is able to understand more fully the basic principles which were incorporated in the practical demonstration project for young fishermen which was originally conceived by George Zimmerman, active secretary of the Lehigh County Fish and Game Protective Association, Allentown, and District Fish Warden C. Joel Young.

Caring for and providing a school for young fishermen was by no means an easy matter. The idea, of admittedly good qualities, had to be of a practical nature in order to be of some demonstrable good.

Through the kind and willing cooperation of Ernest E. Ashley, superintendent of the city parks of Allentown, and an ardent booster of recreational facilities for boys and girls, the initial idea became an eventuality. An ice skating pond of between two and three acres of water surface with an average depth of two and one-half feet served the necessary water requirements for such a project.

To further the possibilities of cover and additional natural insect food, Mr. Ashley arranged to have the park employees place potted water lilies at advantageous places in the pond. In winter, prior to the freezing of the lake, these lilies can be removed and skating hindered in no way.

Following the completion of the preliminary ideas, rules of a more complex nature had to be formulated in order to keep the fishing in the newly developed pond for children alone. This, though apparently the simplest, was quite complex in that few, if any, projects could be used as a model.

After the generous stocking of adult yellow perch, catfish, and sunfish by the Pennsylvania Board of Fish Commissioners, fishing for all unlicensed fishermen was begun June 4, the first Saturday of the month, from 10 o'clock in the morning until 4 o'clock in the afternoon. This same rule was followed each successive Saturday during the month of June.

The months of July and August, school vacation months, permit two angling days in the week—that of Wednesday and Saturday with the formerly mentioned hours of fishing being requested. No wading, swimming and boating are permitted at the Union Terrace fishing project. Even willing adults, eager to aid their children, are taboo. True to its original purpose the idea has not been tampered with and proud children are experiencing the real thrill of their lives at such a splendid opportunity which has presented itself to them in such an accessible form.

Opening Day

As a mere observer it would be an almost impossible task to place into words the simple thrills experienced by the boys and girls present on the opening day in June. One had to actually be there to fully comprehend even the external expressions of inward childish emotions.

"Hey, watch my cork go up and down; I've got a bite," "Boy, but I lost a dandy;" "Look at the size of him," "These darn worms, I wish they'd stop wriggling," and hundreds of similar expressions were truly typical of natural childish enjoyment of a sport so appealing to the majority of our younger citizens in the making.

As for the equipment which was used by our younger sportsmen one could find anything from the crudest of sticks and line to salt water outfits. Conforming to tackle requirements was out of the question. What they wanted was fishing and nothing prevented their enjoyment in any manner.

By actual count Walter Laskowski, active sportsman in the Lehigh County Association, totaled 419 young sportsmen and sportswomen on hand to share the advantages of this pond, designed and prepared for them. Major credit for such an exemplary model is unmistakably due to Commissioner Oliver M. Deibler and Chief Fish Culturist C. Ross Buller for aid and practical assistance; George Zimmerman, for carrying out the original idea; Superintendent of City Parks Ernest E. Ashley for splendid cooperative assistance; and District Fish Warden C. Joel Young for details and assistance in protection.

Though the time has been comparatively short for one to ascertain any practical results from such a youth fishing project in a populous city it is nevertheless easy for even the most skeptical person to see that beneficial future conceptions of what fishing is, and what it should be, are in the making within youthful minds. A day's limit of five, either in the single species or in the combine, has made a vivid impression upon some so that this recreation of sport fishing can be made a fair game and not one where success is measured by the number one creels or the smartness one is able to cheat the law with.

Young boys and girls who really enjoy the great outdoors and have parents to share such realities are indeed fortunate but the boy or girl who has no early guide must be taught in a more detailed manner. Such was the initial idea of the Union Terrace Pond in Allentown. Its purpose has by no means defeated the issue.

SEASON CATCH

During the 1934 season, Walter Puterbaugh and his father, G. T. Puterbaugh, caught a total of 44 wall-eyed pike, 17 to 26 inches in length, and 15 largemouth bass, 11 to 16 inches, from Harvey's Lake in Luzerne County, writes Warden Russ Womelsdorf.

GAME FISH OF TOMORROW

A Discussion of Changes Involving Fresh Water Fish Life

By ALEX P. SWEIGART

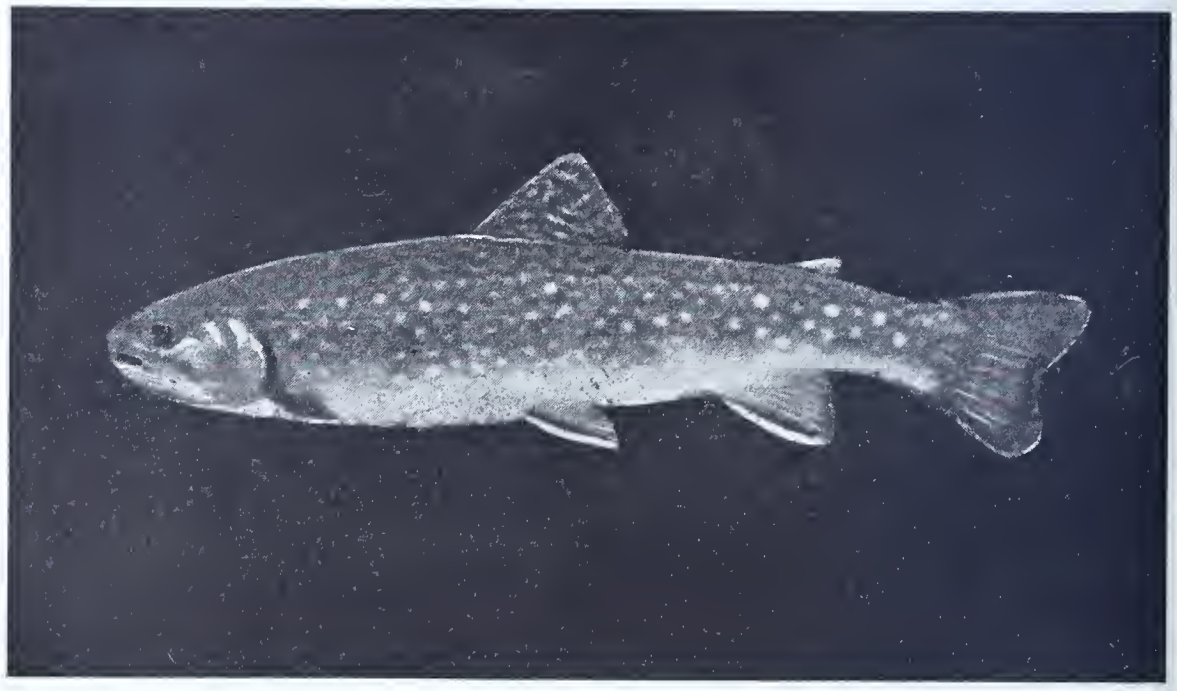
FOR, lo, these many years, we have been hearing a dirge. It concerns that mottled, scarlet-spotted royalty of our eastern American waters, the charr or brook trout. "The vanishing brook trout," we have been told, "will be a memory with the anglers of tomorrow. Save for hatchery-raised fish, poor substitutes for the living arrow of the white water, future fishermen will not be able to catch any"—or words to that effect. This assertion is, of course, overdrawn, for today mountain streams, particularly in isolated north tier sections of Pennsylvania, yield native trout that compare favorably in graceful contour and brilliant coloration with the charr of yesteryear. It is not probable, with the heavy stocking program of trout, legal size and over, now in effect, that the trout fishing sport in Pennsylvania will become a cherished memory with present day anglers, and yet—.

We must face certain indisputable facts relative to the shifting of the inland water fishing balance. First, there has been, owing to drought, logging, clearing of land and cutting of cover, a gradual shrinkage of low temperature waters suitable for trout during the past decade. Second, better roads penetrating to the heart of secluded mountain areas and the automobile have resulted in more intensive fishing on most trout waters. Third, and perhaps most important, we have observed in recent years a gradual extension of the range of habitat of warm water species of fish life in several typical brook trout streams. These factors, while having a definite effect on the trout fishing of the future, do not necessarily carry the implication that it will cease to be. But on the other hand, signs of our times do point to the coming domination of warm water game fishes, particularly the black bass, in waters of the densely populated east.

Let us delve more deeply in this trend toward our future angling. The stream survey of 1930-31 revealed that 5,603 miles of trout streams in Pennsylvania, 3,796 miles of approved warm water streams, and 139,435 acres of approved warm water lakes and ponds retained sufficient flow during drought periods to make possible successful stocking. While apparently this would point to a preponderance of waters suitable for trout, mileage alone considered, certain definite advantages are linked with the so-called bass or warm water streams. First is range. With the possible exception of a few of our larger trout streams such as Pine Creek, Fishing Creek in Clinton County, the Bald Eagle and Spring Creek in Centre County, most of the waters in this classification are small mountain or meadow streams, subjected to radical fluctuation in flow during the past six years of drought conditions. Now, consider a few of the warm water streams approved for stocking with bass. There is the lower Susquehanna, over a mile in width below the Holtwood Dam; the upper Delaware in the vicinity of Milford, Pike County, with its sweeping shallows, pools and riffles; the upper Allegheny of comparable water area; Lake Wallenpaupack in Pike and Wayne Counties with a shoreline of 45 miles, and the Juniata River with its big branches, the Raystown and the Frankstown. Then, too, we must consider the vast new Pymatuning Reservoir with its shoreline of 70 miles, part of which is in Pennsylvania and will be opened to fishing next year. A thousand fishermen angling in any of these waters on the same day would not find themselves hampered or crowded; the same thousand on trout waters in, say, a 20-mile radius—well, just recall any opening day for your illustration.

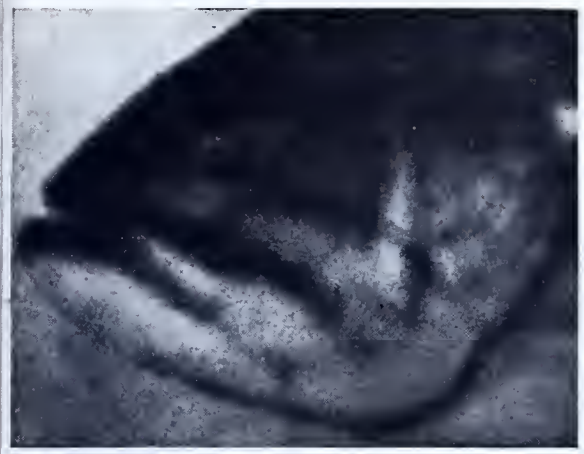
Accessibility must also be ranked a factor for comparison. For instance, it is necessary for a trout fisherman in Philadelphia (if we exclude the possibility of his fishing the popular Wissahickon in suburban Philadelphia or a few streams in southeastern counties) to drive a distance of one hundred miles or more to the streams of Pike County or the Poconos if he desires a wide range of waters in which to follow his sport. Easily accessible, on the other hand, is that increasingly popular stream in Montgomery County, the Perkiomen Creek, for the bass fisherman. The Neshaminy Creek, too, is rapidly coming to the front as a bass producer. Warm water streams, lakes and ponds containing one or more of the popular warm water game species—smallmouth and largemouth bass, pickerel and walleyed pike—are generally more strategically located throughout Pennsylvania for the city fisherman who likes to find his sport in fresh water. Because they are larger generally than trout streams, there is not the possibility of congestion by fishermen and over-fishing as in many trout waters.

While drought conditions, so destructive to low temperature trout waters through reduction of flow and increased temperatures, also carry the ever-present threat of disastrous pollution to warm waters reduced in flowage, certain advantages accrue to the latter group. Recently, in discussing the black bass situation in Pennsylvania, we stressed the vital part played by aquatic vegetation in warm water game fish areas. We have noted during the past six years of drought conditions, a steadily increasing growth of aquatic vegetation beneficial as cover to young fish and a splendid source of increased forage. This year is no exception. More grass has been observed on the Susquehanna River, which has been at extremely low stages this summer, than ever before. These dense patches of vegetation, observation reveals, are harboring literally thousands of minnows, and, even more important from the bass angle, crawfish. When the grass goes out with the lowering of the river water temperature and an accompanying rise in the stream, game fish must benefit from this abundant live forage. Examination of stomach contents of bass taken this season (incidentally, many are being caught in close proximity to the grass patches) reveals the crawfish as the major item of bass food to date.



A Typical Pennsylvania Charr

But perhaps the most noticeable trend, and one which we believe must eventually be a decisive factor in the coming to dominance of the warm water game fish group, is the gradual encroachment of bass, pickerel and other warm water species in typically trout waters.



Observe the Aggressive Head of a Smallmouth Bass

Field Notes

It has been our good fortune to observe this shifting of balance in Willow Run, a brook trout stream in Juniata County. Tributary to Tuscarora Creek, a warm water stream which provides excellent range, cover and forage for smallmouth black bass and pickerel, Willow Run offers no major barrier to free movement of fish life from the larger stream. Our notes extend back to 1922, when the charr or brook trout was numerous in many of the pools in meadowland through which the stream flows prior to its juncture with the Tuscarora. We might add that extensive lumber operations were carried on since that time in the drainage area of the smaller stream.

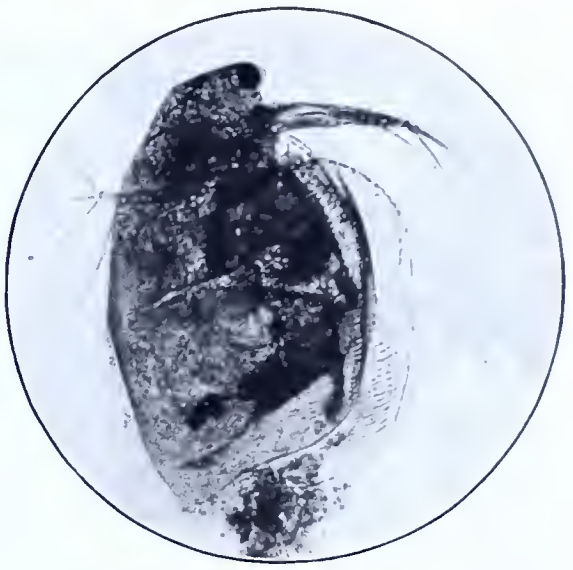
Checking on our notes, we shall designate as locations Point A, at a distance of approximately two miles above the point of juncture of Willow Run with the Tuscarora; Point B, at a distance of approximately 2½ miles, and Point C, at approximately 3½ miles. In 1922, a number of large brook trout, heavy girthed fish ranging in length to 14½ inches, were taken from meadow pools in the Point A section. Other species observed and checked that year included suckers, run chubs, silver shiners and a few fallfish. Of the so-called game fishes, observation failed to show the presence of a single pickerel or smallmouth bass. Some competition for the food supply of the trout was offered by the fallfish, but the charr apparently had the situation well in hand.

It was noted in succeeding years, however, that the meadow pools at Point A contained a constantly diminishing number of trout. In 1927, May to be exact, we observed two pickerel in one of these pools. The fallfish also had increased in number, many being taken on the fly. In 1934, during May, we caught on the fly and released a smallmouth bass about 8 inches in length. As this was the first bass taken or observed, it is reasonable to assume that the pickerel was first to invade the new range offered in this trout stream.

Points B and C offered interesting data in this connection, particularly since 1930. While a few fallfish had been observed at both of these locations prior to 1930, no pickerel or bass had as yet, our study revealed, made an appearance. Point B is typical meadowland, the stream narrowing into a fast deep channel between overhanging banks. In the few deep and comparatively quiet pools, several pickerel were observed last year. Point C, located just where Willow Run emerges from the timberland which characterizes most of its course above this point, was observed last year to contain a larger number of fallfish than ever before. Whether or not this stream section will mark the limit of the warm water fish invasion only the future can reveal. Smallmouth bass in increasing number are being noted in the water below Point A and a number of nice bass catches have been made in this stream section during the past three years.

Of the factors that may be responsible for this change of balance in aquatic life we should perhaps list temperature and an abundance of forage suitable to bass and pickerel as outstanding. Drought conditions reducing the stream flow, and cutting of the timber on the watershed has resulted in the past eight years in a slow but steady rise in temperature, until, in Section A, an extreme summer water temperature of 75 degrees has been recorded. This alone, however, we feel could not account for the presence of the bass and pickerel, and scarcity of brook trout. The tendency of the adult charr to move into lower waters after spawning in the autumn, remain there until water temperature rises in summer and then seek cooler stream areas or spring tributaries, is well known.

Both the black bass and pickerel are extremely adaptable fish, as witness the amazing rapidity with which the former increased in virtually all waters to which it was introduced in Pennsylvania. We are inclined to think that where suitable forage conditions obtain, the bass and pickerel will readily make themselves at home. In the instance of Willow Run, we believe this factor to be outstanding.



The Daphnia or Water Flea is a Vital Food Item for Baby Bass

Conclusion

It is extremely difficult and it would be foolhardy to say that because "this or that" condition prevails on a certain water, all other waters are similarly affected. We do know, however, that on Penn's Creek in Union County, smallmouth bass and brown trout are being taken from the same stream section; that on Pine Creek, the bass movement has progressed steadily toward the upper waters during recent years. If any conclusion is to be reached, it is that the black bass, smallmouth or largemouth, but more particularly the smallmouth in the instance of trout waters, is the most versatile of all our game fishes. If it encroaches on trout waters of its own accord and establishes itself in them, we have all the more reason to think that it is the game fish of tomorrow. Under Pennsylvania's rigorous system of stream stocking,

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A View on the Perkiomen Creek

PENNSYLVANIA'S POISONOUS REPTILES

By DR. B. D. HETRICK

OUR old friend Paul L. Swanson, the herpetologist, being located in the state of Indiana this summer, we will try to give the readers of the PENNSYLVANIA ANGLER a little information on Pennsylvania's poisonous reptiles.

First we will consider the one with the widest distribution which is the Copperhead. This snake has been found in 38 of our 67 counties. There is much indecision on the part of many in the identification of this snake and the head, from which it derives its name, is not a reliable indication. Its head may or may not be copper colored. A more reliable indication is its markings which are from 18 to 24 dark brown or reddish brown hour glass shaped markings with the narrow part of the markings on top of the back and the wider parts on each side of the snake. These markings are on a light brown or pinkish background.

We present herewith a picture of a mother copperhead with five youngsters. These are born in August or September and may number from three to nine. They are born in a thin transparent sheath from which they emerge shortly after and are at once ready with poison in proportion to their size.

The next most widely distributed poisonous snake in Pennsylvania is the Timber Rattlesnake. This snake has been recorded from 36 of our 67 counties and is probably extinct in most thickly settled regions. The color of the Timber Rattler is quite varied and may range from sulphur yellow to velvet black. Generally speaking the yellow rattlers are female and the black ones male. Black females have, however, been found. Regardless of the color they are all one and the same snake in different color phases.

The head of the Timber Rattler is covered with small scales. We present herewith the heads of two timber rattlers in the hands of Paul L. Swanson. In the open mouth picture the fangs, which are hinged and fold back in a sheath, are erected with a common pencil. A drop of venom may be seen on the back of each fang. The small raised area just back of the tip of the lower jaw is the opening of a branch of the windpipe through which the snake breathes while in the process of swallowing prey. Many fallacies exist concerning snakes and particularly poisonous ones. Some think that a rattler's age may be determined by the number of rattles. Each rattle denotes that its owner has shed one time. As a healthy rattler may shed from three to five times in a single season, depending on his source of food, the rattles are a poor indication of his age. Showmen often slip extra rattles on a specimen to make a better exhibit. Then, too, sections of the rattle may be lost while going through rough places which would account for some large specimens having few rattles.

In the head picture is shown the reason why Pennsylvania's poisonous snakes are called pit vipers. All poisonous snakes found in our state have a "pit" or depression midway between the eye and the nostril. Nature's reason for this is not known although several large nerves terminate in this pit.

Massasauga and Young

The third member of Pennsylvania's poisonous snakes is in only five western counties. It is the Massasauga or Swamp Rattler and is found in upper Allegheny, Butler, Venango, Mercer and Crawford Counties. Its southernmost range is the Ohio River and eastward to the Allegheny. It is found northward through the western end of New York State and into Ontario and westward to Kansas and Nebraska. Black Snapper and Prairie Rattler are names by which it is also known. It differs markedly from the Timber Rattler in that it belongs to a different group of rattlers, The Timber Rattler is a member of the group of rattlers that have scaled heads and which include the Diamond Back and about sixteen other sub-species. These are known as the Crotalus group. The Massasauga is a member of the Sistrurus group which has only two other members and are characterized by plates on the head similar to the pilot black snake. The Massasauga is a grayish brown in color with five rows of brown or black spots extending throughout its length. One row will be found down the middle of the back and two on each side of the reptile. The rattles are rather small compared to our timber rattler but make the characteristic sound only not so loud on account of their smaller size.

All three of our poisonous snakes depend on their poison for their food and strike their prey before attempting to eat it. They prefer to hide or flee instead of striking in defense and generally only do so when cornered.

The best treatment is the early removal

Closeup of the Head of a Timber Rattler

Game Commission Photo

of the poison from the wound by suction after rather radical incision with a sharp knife. Several good suction outfits are on the market at a nominal price or the wound may be sucked by the mouth in an emergency. As long as there are no abrasions about the mouth there is absolutely no danger even if a drop or two were swallowed. A professor in a mid-western university annually swallows about a tablespoon full of venom in demonstrating this fact to his classes.

The anti-venom injections have some virtue as an adjunctive treatment but it would take several large tubes to counteract a moderate amount of venom. The suction is by far the most effective treatment.

Snake bites rarely occur above the knee and leather puttees or even emergency puttees made of fine mesh wire are effective protection.

There are several practices and beliefs that may result disastrously if indulged in by those not familiar with poisonous reptiles.

One is the belief that the fangs of a reptile may be jerked out with a silk handkerchief. You may disarm a snake for a short time in this manner but they are constantly growing new fangs and shedding the old and a snake so treated will not remain harmless for very long.

If you desire to obtain the skin of a poisonous snake, first sever the head from the body, after you are sure that you have rendered the snake harmless. This is best done by placing the sole of the shoe on the head and cutting it away from the

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Closeup of Rattler's Head, Fangs Erected

Copperhead and Five Young

CONCERNING NYMPHS

By R. W. McCAFFERTY

IT is a known fact that nymphs make up the largest percentage of a trout's diet. I mention that it is a "known fact"; if it were well known the stock of our streams would be even more greatly reduced due to this very effective method of taking fish, nymph fishing.

Nymphs are the caterpillars of trout flies. The female fly lays her eggs upon the stream and they quickly sink and adhere to rocks, submerged logs, etc. Here they remain until hatched at which time they become nymphs. They are more numerous than the mature fly, and, are present at all times, a fact which cannot be stated for the adult. Consequently nymphs enjoy (??) a percentage said to be from 80 to 90% of a trout's diet. It is this fisherman's belief that "trout sense" or the ability of the angler to more thoroughly understand trout habits, and conservation grow hand in hand in individuals and it is this fact, I believe, that will prevent our streams from being "fished out" as this type of fishing becomes more popular.

Here are a few methods of nymph fishing which may be beneficial to you. An exact imitation is no more necessary here than in dry flies. However a good imitation is to an extent, an asset. They must appear to the fish to be as unattached as it is humanly possible to make them. The action of the natural must be imitated as closely as your skill will permit. In this respect, remember always, that practice makes perfect, but it tends also to perfect our defects, so be governed accordingly. Nymph fishing is said to be more difficult than either dry or wet fly fishing which brings out the fact that you cannot be lax or careless at any time. The feeding time of nymphs is said to be in the evening and night. This does not mean, tho, that this is the only time they are to be found moving about. High water, a stone overturned accidentally, and many other things will dislodge these insects, and not being able to combat the current they will drift downstream until again able to fasten themselves to something or be eaten by a fish. In their drift they make efforts to swim and this effort is very jerky. To imitate this particular movement, cast up and across stream and allow the imitation to pass you. After it has drifted the full length of your cast, if your line has not been stopped or slightly retarded, which probably signifies that you have had a strike, begin a series of short jerks retrieving up stream, trying at all times to keep your fly in slower water as it would be unnatural for it to swim against a strong current. It should be remembered, that unless flies are hatching, you should try to make your fly appear that it is trying to get under a rock, log, or some obstruction where it can hide. Keep it near or on the bottom. If it so happens that there is a "hatch" your fly should be fished to imitate a nymph slowly rising to the surface. When a natural reaches the top, it is only a matter of a split second until the wings spread and dry and the adult insect flies away. To accomplish this, cast if possible into the riffles leading into a pool. As the fly reach-

SKETCHES OF NYMPHS AND NYMPH TYING

By CHAS. M. WETZEL

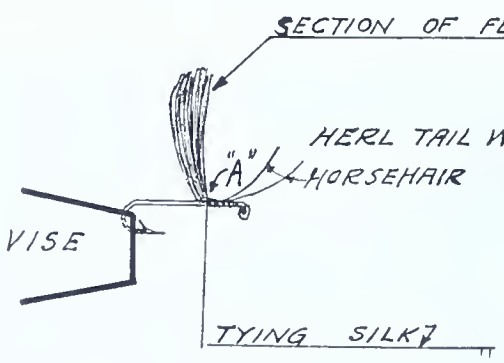


FIG. 1.

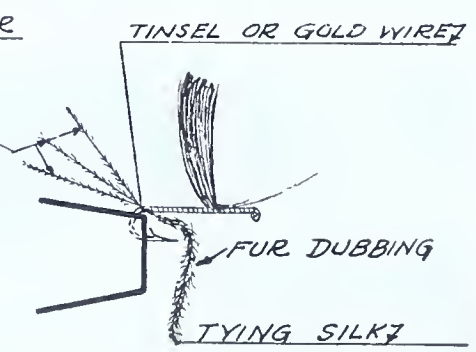


FIG. 2.

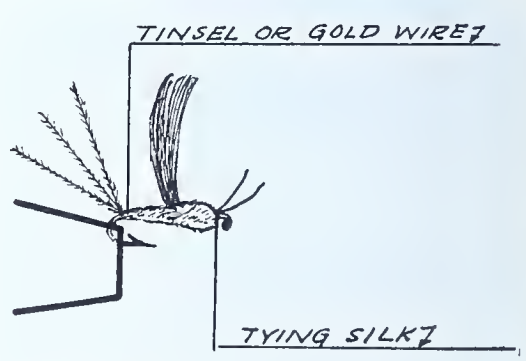


FIG. 3.

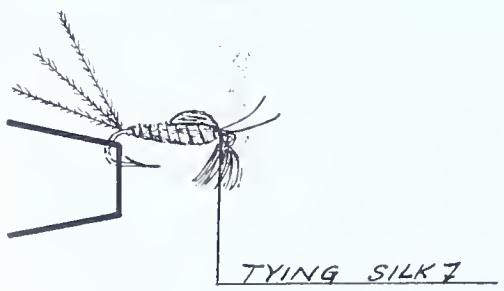


FIG. 4.

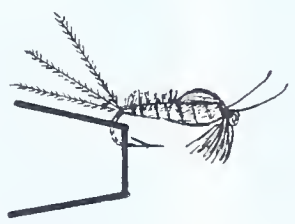


FIG. 5.

es the slower water of the pool and has sunken a little give your rod tip 2 or 3 minute twitches. This causes the nymph to appear to be swimming to the surface. Leave it drift again about 2 feet and again give it the same action. Continue this until it reaches the end of the pool and, keeping it in slow water, begin your retrieve. Many good fish will lie at the end of a pool, a vantage point, as all the food missed by the other fish will be swept into the swifter water at the pool's end just before going into another riffle. Many fish will follow your fly for quite a distance before taking it, and it is at this time that, if you see the fish, you will have to use utmost control and continue the action as naturally as possible for the fish is trying to ascertain whether or not the fly is "natural." To fail at a time like this will very likely put your fish off feeding for some time.

The foregoing suggestions all seem quite simple and the ordinary fisherman, with practice, will be able to master them in time. It is very difficult for most fishermen to bear in mind these little, very necessary, points after he has seen a nice fish rise. When you experience this and become anxious, it is a good rule to stop fishing and enjoy a smoke or the scenery for 5 or 10 minutes. One little fluke is sufficient to put a fish off feeding. With fishing what it is today and the number of large fish comparatively few, one cannot afford to put down a half dozen trout and still expect a creel of nice ones at the end of the day. You will have reached a high point of efficiency in trout fishing once you are able to figure out the seemingly peculiar habits of the trout and can see his side of things.

ANOTHER BIG BASS FROM THE PERKIOMEN

Although a little late for our records of 1935 champion fish taken in Pennsylvania, a largemouth bass reported to Warden Harry Cole, of Norristown, recently was runner-up in that division.

"While checking fishermen on the Little Lehigh last week," writes Harry, "I met Mr. Hoffman of Macungie. He told me that last summer he caught a largemouth bass on the Perkiomen Creek at Palm that measured 27 inches and weighed 7 pounds, 14 ounces. He said that the big fellow had three hooks and some slits and holes in his mouth. Some bass."

SPECIAL WARDEN SAVES BOY'S LIFE

While Special Fish Warden James Rittenhouse of Reading was patrolling the Conestoga Creek south of Terre Hill on July 25, he came upon a group of picnickers. Some of the children, although not able to swim, had put on bathing suits and entered the water.

Going beyond his depth, one little fellow went under. Rittenhouse plunged into the stream, picked the child from the bottom to which he had sank, and resuscitated him. He won the respect and admiration of every one on the party by his gallant act.

"BOBBY" SCORES

"BOBBY" SCORES

Meet Bobby Rodrian of Morgantown, brother anglers, who recently, according to Warden Bill Wounderly of Reading, established a bass catching record for his dad to shoot at.

Bobby, 12 years old, and his buddy, Bill James, 14, had gone to Joanna dam in Berks county on July 21 to try their luck. Catching a few minnows for bait, they fished from four in the afternoon until sundown with nary a strike. Then, just as Bobby was retrieving his line to quit fishin' —but let him teli it.

"All of a sudden," he said, "I got a wallop of a pull. I hollered for Bill and Bill helped me to pull this fellow in through the cat-a-nine tails. After we drug him out, we put him in the live bag and I slung him over my back and started for home. We got a lift when three guys came along in an automobile and drove me right to my home. Did I rub it in on dad! I told him I catch the big ones and let the little ones for him."

Bobby now has the head of his big bass, a large mouth measuring 20½ inches in length and weighing 4 pounds, preserved on a board, just to prove he landed it.

FISHING CONTEST

A contest for fishermen in Montgomery County has been announced by the Norristown Sport Center in Norristown. The contest will be open from April 16 to October 31, inclusive, and prizes for the largest largemouth bass, brook trout, catfish, carp, smallmouth bass, brown trout, wall-eyed pike and yellow perch entered include a fine watch, fly rod, casting reel and line, casting rod, trout reel and casting line.

Rules governing the contest specify that all fish entered in the contest must be caught with rod and reel and in strict accordance with the fish laws. All fish entered must be brought to the store, which is located at 140 Main Street, Norristown.

FLOATING FISH NESTS DESIGNED BY GEORGIA STATE FISH COMMISSION

Fish in Georgia's lakes will be replenished through a plan recently adopted by the Department of Game and Fish. Under the direction of C. C. Jones, Superintendent of State Fish Hatcheries, fish culturists have perfected a floating fish nest designed to provide spawning grounds on large lakes which are used for furnishing water power. On these lakes the water line fluctuates according to the amount of water consumed. and the amount of water supplied by rain.

Fish spawn on rocks and gravel near the shore line, and as the water line falls the spawning grounds are exposed to the air and the spawn is destroyed. The floating nests are suspended on 50-gallon oil drums anchored in the coves and inlets of the lakes. The nest is a box 24 inches x 30 inches in length and width and 5 inches in depth, filled with gravel, and swung from the center of the floating drums. The male fish discovers this floating nest and brings its mate there for breeding.

These nests were proved to be practical when ten of them were used last year for experimental purposes. In one instance a net was thrown around the location of one of the nests, and when pulled up it contained several thousand fingerlings that were bred in the nest.

The Department of Game and Fish plans to place over 500 of the nests in various lakes throughout the state.

WALLENPAUPACK PIKE

Warden Frank Brink of Milford, Pike County, reports some fine catches of pike-perch or wall-eyed pike this year from Lake Wallenpaupack. On July 21, Charles Crump of Hawley landed a pike measuring 31 inches in length and weighing 9 pounds. John W. Hildenband, 1453 Fairview Street, Reading, scored with a 28-inch wall-eye weighing 7 pounds on the same day. Both fish were brought in to Pep Singer's Landing.

William Collier of Quakerstown was in the running for big pike honors, landing a fish measuring 26 inches in length and weighing 6 pounds. A catch of nine big pickerel was made in Promise Land Pond on July 14 by W. Gillespie of Bethlehem. Three of the fish were over 24 inches in length.

MAKES BIG CATCHES IN SUSQUEHANNA

Dick Cox of Highspire has had better than usual luck this year in fishing for bass in the Susquehanna River near Harrisburg, according to Warden Frank Sanda of Steelton. Fishing crawfish, Cox, on the first day, scored a catch of 10 smallmouth bass, one measuring 17½ inches, and the others from 9½ inches to 17 inches in length. On the second occasion he tried the big river, on the west shore near Highspire, he landed eight smallmouth bass from 12 to 13 inches in length. The fish were taken before noon on each day.

What is Being Done About Stream Pollution

(Continued from Page 1)

Harold Hutchins, Binghamton, N. Y., polluting stream in Susquehanna County, prosecuted by Fish Warden M. E. Shoemaker, June 6, 1935. Found guilty and paid fine of $100. Before J. G. McCreary, J. P.

West Penn Cement Co., West Winfield, Pa., pollution of Ruffs Run and Buffalo Creek, June 10, 1935, Killing fish. Prosecuted by Fish Warden J. H. Bergman and paid fine of $100 for fish killing and $100 for polluting the streams.

John Adams of Breyer Ice Cream Company, causing pollution by flushing out tanks, killing fish. Prosecuted by Fish Warden C. V. Long, July, 1935, and fined $100 and costs. Fine to be paid in monthly payments of $25 each.

Lawrence Davis, Connellsville, pollution by sawdust. Prosecuted by Fish Warden James H. Banning, January 18, 1936. W. A. White, J. P., Connellsville. Fined $100.

Charles F. A. Leeds, pollution of Irishtown Run west of Huntsdale, Cumberland County by tar oil from sprayer, April 4, 1936, killing about 90,000 fingerling brown trout, also a large number of brook trout. Fish Warden George James prosecuted Mr. Leeds before Wm. Dosh, J. P., Carlisle. He was found guilty and paid fine of $100.

Charles Love, Scottdale, Pa., pollution of Tub Run by sawdust. Prosecuted by Fish Warden J. H. Banning before John May, J. P., Connellsville Twp., found guilty and fined $100 and costs of $2.25. (He paid $7.25, balance to be paid in weekly installments.)

Bayless Pulp & Paper Co., Austin, Pa., fish killing in First Fork of Sinnemahoning Creek, prosecuted by Fish Warden G. W. Cross, July 17, 1936, before F. J. Wendall, J. P., Coudersport, found guilty and paid fine of $100.

Frantz Distillery, Berlin, Somerset County, fish killing in Blue Lick Run due to polluting material from this distillery July, 1936. Prosecuted before Charles J. Harrison, Jr., J. P., Somerset, Pa., by fish warden Sam Henderson and paid fine (under protest claiming unavoidable accident.)

In addition to those who paid under prosecution, the following paid the penalty without necessity of prosecution:

The Sylvania Corporation, Oil City, Pa., pollution of West Branch of Genesee River. The Sylvania Pipe Co. put a new gas line across the river about one mile upstream from Ellisburg, placing two large carbide generators on the bank, then piped the gas along the line to weld the large line. October 12 the two generators were drained and most of the used carbide and water entered the stream killing all fish life down to Ellisburg. Fish Warden W. R. Rumsey of Coudersport and Warden G. W. Cross investigated and the attorney for the Company advised the payment of the $100 direct to save costs. Warden Rumsey made report and sent check for $100 to Harrisburg October 23, 1935. Check No. 421, October 19, 1935, for $100 as a contribution for restocking.

Pennzoil Co., No. 2 Refinery, pollution Oil Creek, Venango Co., killing a number of fish. Fish Warden J. H. Hall interviewed the Supt. L. D. Fulton, who advised this was an accidental discharge and requested time to investigate. October 25, Mr. Hall again called on Mr. Fulton who advised him the Company had decided to contribute $100 for restocking. Mr. Hall was given check for $100 which was sent in to the Harrisburg Office.

Percy N. Helsel, Elton. Pollution Little Paint Creek, Cambria County by blue stone and lime. Agreed with Warden Lender to settle without prosecution and sent $25 on account to Harrisburg office November 29, 1935, balance to follow. Mr. Lender to keep after and see that balance is paid.

Pres. Hanover Wire Cloth Company, Frank Jones, Hanover. Contribution for restocking made to Fish Warden George James, $100. Fish killed in Oil Creek, April 23, 1936.

Viscose Company, Lewistown, Mifflin Co., fish killing in Jacks Creek by wastes from plant, May 8, 1936. Fish Warden C. V. Long was advised by G. S. Tompkins, Supt. of the Plant that this was an accidental discharge caused by some unknown person operating a valve. This happened on several occasions and the company was advised to padlock these valves. Mr. Deibler advised Mr. Tompkins that it was mandatory on our part to collect the fine, and in lieu of prosecution the company sent a check for $100 as contribution for restocking.

Elk Tanning Co., Elkland, fish killing in Cowanesque River, on or about June 20, 1936. Prosecution authorized by Mr. Ladner. Fish Warden Shoemaker interviewed officers of the company and they desired to make a contribution in lieu of prosecution and gave Mr. Shoemaker check for $100.

Rochester and Pittsburgh Coal Co., fish killing by dumping sewage from toilets along Stump Creek at Helvetia, Clearfield County on July 11, 1936. In lieu of prosecution this company agreed to make contribution and gave Mr. Shoemaker check for $100.

Besides this, determined efforts have been made to take streams with just a few spots of pollution and clean them up. One example of such streams is the Clarion. The following report of the present status of pollution of the Clarion River just received from the Sanitary Water Board indicates the present picture:

"The following is an outline of the present status of the pollution of the Clarion River as affected by the wastes from the tanneries and paper mill, as follows:

"Three operating tanneries are located upon the drainage area of the Clarion, the two at Wilcox and Ridgway being owned by the Elk Tanning Company, and the one at St. Marys by the J. K. Mosser Leather Corporation. A fourth tannery at Johnsonburg, owned by the Kistler Leather Company, has not been in operation for a number of years and the company is under notice to make proper preparation for waste disposal in advance of the opening of the tannery.

"Due to the insistence of the Board and the Attorney General, the Mosser Company has been actively constructing new waste treatment works for its St. Marys tannery and these works were approximately 95% completed at the time of the Board's latest information. The company has been showing good faith in proceeding with construction, the works provide the degree of treatment deemed necessary by the Board's engineers, and the company is under notice to take such additional steps as may be necessary to afford proper protection to the Clarion.

"The Elk Tanning Company has likewise been actively prosecuting the construction of the improved waste treatment works at its Wilcox tannery and has also been showing good faith in this project. The latest information indicates that these works are approximately 85% completed at the present time. The company has proposed and received approval by the Board in principle of the opportunity of testing out the treatment works at its Wilcox tannery before undertaking the construction of the treatment works at its Ridgway tannery in order that the experience gained at the Wilcox works may be utilized at the Ridgway works, the plant at Wilcox involving certain advanced methods of treatment concerning which it is desirable to gather actual operating data.

"The sulphite paper mill at Johnsonburg, owned by the Castanea Paper Company, is the principal source of pollution of the Clarion River. The Board has exerted continuing pressure upon this company to develop practical means for the disposal of the company's sulphite liquors; at the present time there is no method known to the engineers of the Board of disposing of sulphite waste liquors which has reached a stage of proven practicability. The Castanea Company has investigated a number of the more promising processes; has entered into preliminary negotiations relative to use of these; but has been awaiting certain progress upon the part of the inventors before committing itself to the use of any of these processes.

"In the case of the Howard Process it is understood that the promoters have not developed it to a point where they are ready to release it for use. The fermentation process is in process of patent litigation; and the Paulson Process is at present a theoretical possibility of undetermined practicability, so it is understood.

"In addition to the investigation of the foregoing processes, the Castanea Company has carried forward its own investigations for the disposal of sulphite liquors. The engineers of the Board have pressed the com-

Two veteran anglers inspect a casting rod. "You'll take 'em on this," Grover Ladner (right), is telling Hansell French, Secretary of Agriculture. The rod was presented to Mr. French by employees of his department at a Birthday Dinner, given in his honor.

pany for definite statements of progress made and in response to the Board's action at its last meeting the company was notified of the necessity of submitting to the Board a statement setting forth the dates when the company expected to accomplish the several definite steps necessary to a satisfactory disposal of its waste waters.

"Although it is hoped that some satisfactory answer may be received in time for presentation to the Board at its next meeting.

"Very definite progress has been made by the tanneries but the paper company has not made the same constructive progress, quite possibly because at the present time there is a question as to the extent to which practical means for waste water treatment have been developed.

"Contrary to the general impression, there is a definite improvement in the Clarion River even though to the lay observer the accomplishments are not yet apparent."

Another example is the Brandywine Creek, on which we have received the following report from the Sanitary Water Board under date of August 13, 1936:

"I am pleased to inform you that the Downingtown Paper Company at Downingtown has already presented to us a plan providing for two very large sedimentation tanks intended to remove settleable solids from the waste waters prior to their discharge to Brandywine Creek. A steam shovel is reported to be on the ground ready to begin excavation as soon as we have informed the company that the plans are satisfactory.

"Yesterday (August 12, 1936) a letter was addressed to the company informally commenting on the plans and making certain suggestions intended to improve the efficiency of the basins and, also, Mr. J. Gibson McIlvain, President of the company, telephoned me yesterday morning to urge prompt consideration in order that work could proceed at once.

"Since the basins as proposed will be quite large and will be provided with masonry or concrete walls, some time will be necessary for their completion but both the company and myself believe that if the work is expedited, as proposed, the basins can be in operation in about two months.

"I am also pleased to report that a statement has been received from S. Austin Bicking Paper Manufacturing Company that they have placed orders for equipment necessary to provide improved waste water treatment at their Mill No. 1 similar to the satisfactory system established at Mill No. 2 at Downingtown. They are informed that delivery of a Save-all will be made in from six to eight weeks and, in the meantime, preparations are proceeding in the mill so that the new machinery may be placed as soon as it is received."

A conference has been called on the French Creek situation for Tuesday, August 25.

Of course, during the recent period of low flow there has been an orgy of fish killings. Many have been due to the willingness of industry to take chances that they would not have taken if a penalty commensurate with the offense, such as fixed by the Ruth Bill, were on our statute books.

The action of the Board of Fish Commissioners and the Attorney General, insisting upon prosecutions under the Fish Code, has the support of the Governor, who sent a communication to the Attorney General which read:

"Take whatever action possible to stop this destruction of fish by the pollution of our streams.

"George H. Earle."

Game Fish of Tomorrow

(Continued from Page 7)

black bass of either species today are being planted only in major warm water streams and lakes offering wide range and abundant natural food. Trout streams likewise are classified for stocking with brook, brown or rainbow trout. Under this rigid stocking system, the planting of species of fish life regarded as deleterious to the welfare of any stream is checked.

Nature, however, must offer the final solution in this problem of the range of the various species of game fishes. That her balance has turned toward the aggressive and adaptable bass, we are led to believe. The fact remains (with due deference to the trout fishermen) that in this truly American game fish the angler of tomorrow will find no lack of sporting possibilities.

The Upper Delaware River, Great Smallmouth Bass Water

Pennsylvania's Poisonous Reptiles

(Continued from Page 9)

body. Always pick up a dispatched snake just back of the head if you must pick it up at all. The instinct is to take hold of the part farthest away from the head, namely the tail. In case the snake is not nearly so dead as you may think you are liable to a nasty bite in the wrist or forearm which may prove quite troublesome.

BUTLER CATCHES

Special Warden Clifton Iman, of Evans City, reports some nice catches of trout early in the season from Thorn Run, Butler County. Joseph Gretch, Tarentum, landed 12 brown trout; George Howard, Butler, 15 brown trout; Val Brightenbaugh, Millvale, R. D., 5 brown trout and 5 rainbow trout; and George Lippert, N. S., Pittsburgh, 8 brown trout.

BELIEVES FLOODS MAY HAVE HELPED STREAMS

Writes Warden Link Lender, of Bellwood, Blair County:

"I believe the flood has made better trout streams. We doubtless lost some trout but there was no great loss. I found that there are better pools than before the flood, the channels are cleaned out of the muck and rubbish and sediment that has collected for years. This should provide a better flow of water in the main channels, not scattered so much. The small spring streams are also cleaned which should provide better water for the main stream. Washed-out underbanks, trees and stumps will offer ideal cover for trout. Of course, a lot of trout food has been washed away but with a better flow of water in one channel this should come back fast. Those fishermen who want to help in stream improvement could aid in this work by going along the streams and replacing in them some of the water-soaked logs, stumps and uprooted trees."

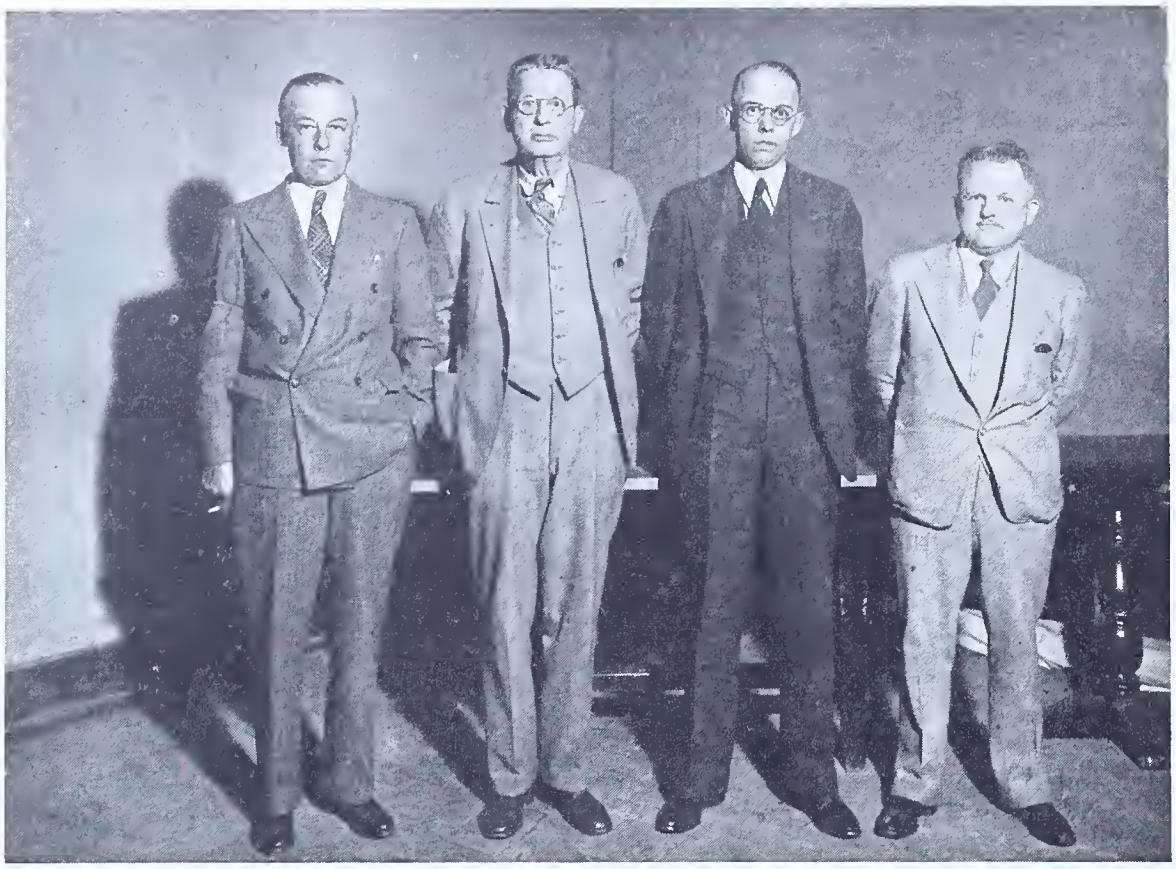
BOOSTS ARTIFICIALS

Writes Edward L. Seppa, 128 Newport Street, Sheatown, Nanticoke:

"I do all my angling with artificial bait and flies and believe that any man can catch fish with live bait. Last year I caught 149 bass on flies and only kept 9. Landed 112 brook and brown trout, keeping 13. I hope a great many of our so-called 'fish-hogs' wise up and fish for sport."

PLAN OX ROAST

The Federated Sportsmen of Lancaster County have announced that their annual ox roast will be held on September 20 at the Pennsylvania Railroad Grounds at Lancaster. The event, one of the largest sportsmen's rallies in southeastern Pennsylvania, will be featured by games, sports and refreshments.



(A) Here are the officers of the Presque Isle Sportsman's League, livewire organization with a membership of 1,700 Erie County nimrods and anglers. Left to right—Ralph W. Swan, vice-president; James C. Hadley, treasurer; William A. Schildmacher, secretary; and Dr. John J. Koehler, president.

(B) Over 700 members of the Presque Isle Sportsman's League, Erie County, turned out for a recent social session of the organization, at which motion pictures furnished by the Game Commission and Fish Commission were shown. Here's a photo of the group.

PERKIOMEN SPORTSMEN PLAN FISHING CONTEST

The Perkiomen Valley Sportsmen's Association at Schwenkville plans to sponsor another fishing contest this year, according to a recent announcement received by the Angler. The announcement follows:

The Fish Committee has the following report: "The Perkiomen Valley Sportsmen's Association, of Schwenkville, will again sponsor a fishing contest. The purpose being to have members become better acquainted with methods and ways of catching fish for sport and pleasure, and to encourage sportsmanship in fishing."

Rules

1. The contest is open to all Junior and Senior members in good standing at the time of the catch.

2. The contest will open April 14th and close November 30th.

3. All fish entered must be taken with rod, reel and line in open waters of Pennsylvania.

4. Prizes will be awarded in each of the following species: largemouth bass, smallmouth bass, trout, pickerel, carp and catfish. The number of entries will be a determining factor in awarding the number and quality of prizes.

5. The following information must be verified by at least two witnesses or accompanied by a sworn affidavit:

Species: ..... Line: .....
Where caught: .... Time of day: .....
Reel: ..... Length: .....
Date: ..... Rod used: .....
Weight: ..... Lure or bait:.....
When caught: .... Girth: .....

CONTEST FOR JUNIOR MEMBERS ONLY

There will be a suitable prize given to the junior member catching the largest sunfish. The report must be made on the same basis as for the adult members.

SNAKE AND SNAPPER (S) CONTEST

1. This contest will be run on points. The entire snapper, or top and lower shell, must be turned in to a member of the FISH COMMITTEE. This will count ten points, whereas one snake tail at least three inches long will count one point.

2. There will be a first and second prize for senior members and a first prize for junior members earning the most points.

3. All entries shall be turned in to a member of the Fish Committee within the dates specified in the Big Fish Contest.

LYCOMING SPORTSMEN ATTEND BIG OUTING

Bait and fly casting, a special bobcat trap contest, trap shooting, rifle shooting, pistol shooting, quoits, archery and a running deer target shooting contest were among highlights at the annual picnic of the Consolidated Sportsmen's Association of Lycoming County, held on July 29 at Shore Acres in the picturesque Loyalsock Valley. Over 2500 sportsmen and sportswomen attended the picnic, which was regarded as one of the most successful in recent years.

Another feature of the picnic was a rodeo by the Pennsylvania State Police. The event was attended by Seth Gordon, Executive Secretary of the Board of Game Commissioners; O. M. Deibler, Commissioner of Fisheries; William G. Fluke and Samuel Castner, Game Commissioners; Judd Turner, Assistant Executive Secretary of the Game Commission, and H. R. Stackhouse, Secretary of the Board of Fish Commissioners.

PRIZE WINNERS

Prize winners in the annual contest conducted last season by the Canton Rod and Gun Club were announced recently. John Innes landed first prize in the pickerel division with a 24½-inch fish weighing 2¾ pounds; first prize smallmouth bass was a 17¾-inch fish weighing 3¾ pounds. Ben Palmer caught the largest wall-eyed pike, 27 inches in length and weighing 7 pounds.

NOVEL FISHING CONTEST SPONSORED IN LEHIGH

In a novel trout fishing contest, the first of its kind in the eastern part of the state, the sporting goods store operated by the Witwer-Jones Co., of Allentown, is creating a new interest among the thousands of trout fishermen who frequent the Little Lehigh and Jordan Creeks.

Through a system of tagging, recommended by C. Ross Buller, Chief Fish Culturist of the Fish Commission, the released brown and rainbow trout were marked with numerical metal tags placed with special pliers on the gill covers of the fish. A special record of the number, species, and where released has already been made. When the trout are caught, the angler is requested to make a careful study of the fish, note when and where it was caught, as well as describe the lure used.

The trout, after purchase from the Trexler Trout Ponds, were tagged by Clayton Reisch, superintendent of the hatchery; District Fish Warden C. Joel Young of Fullerton; H. R. "Zeke" Witwer, member of the firm sponsoring the contest; and Charles H. Nehf, field and stream writer of the *Call*.

In distributing the tagged trout, the places covered in the Little Lehigh extend from Rathburn's bridge above the hatchery to the well known Bogert's bridge, while in the Jordan, the fish were released between the old Kahler's dam and the Ray Belle Farms. Not one of the fish released is less than 9½ inches in length with one of the rainbows measuring about 17 inches.

The contest, as sponsored by the Witwer-Jones Sporting Goods Co., is open to all fishermen without charge. All that is needed to become eligible for the contest is to register the name at the Witwer-Jones Sporting Goods Store, one week prior to the catch. No purchase is necessary before a name and address can be entered in the contest.

One purpose of that contest is to study the movements of stocked fish; so it is of particular importance that the fortunate anglers note the place where the trout are taken. Final tabulations will then reveal whether the fish have migrated above or below their place of liberation or remained in the immediate location.

As a suitable reward, the Witwer-Jones Sporting Goods Co. have arranged an attractive list of prizes for the lucky anglers who return the tagged trout.

SHENANDOAH SPORTSMEN HOLD BIG MEETING

At a big rally in the Shenandoah High School, members of the Shenandoah Fish and Game Protective Association and their friends heard fine talks by Fish Commissioner Dan R. Schnabel, better known as "Uncle Dan," and Randolph Thompson, Game Commission lecturer, on fish and game. Interesting movies relative to the work of the Game Commission and the Fish Commission were also enjoyed at the meeting, which was topped off with a luncheon.

John Ziegler, East Waterford, with a Trout and Eel he caught at Horse Valley Creek.

In speaking to the Shenandoah sportsmen, Commissioner Schnabel told of the work of the hatcheries in producing millions of fish for distribution to waters of Pennsylvania. He explained the problems of feeding the various species of fish and stressed the importance of following the code of good sportsmanship while on the streams.

Mr. Thompson spoke concerning the game production program and urged the sportsmen to continue next winter the fine game feeding program which they carried on so successfully this year. The Editor spoke on the importance of conserving the supply of forage fishes in bass waters for better future fishing.

President Anthony Boxer, of the Association, introduced the guests at the meeting.

TWIN LAKES CATCHES

Twin Lakes in Pike County has been providing some good bass fishing this year. Russell Price and Jerome Peters caught 11 bass on July 29, the largest, a largemouth, weighing 3 pounds 2 ounces. Seven bass was the catch of Roger Baylis, Westfield, N. J., and Sterling Patterson of Bayville, N. J. Four of them each measured 16 inches, one was 15, one 13 and one 11 inches. Anglers Williams and Lewis of Carbondale caught 14 black bass, 6 yellow perch and 12 bluegill sunfish in a day's fishing. A 19½-inch pickerel was caught by Daniel Lowe of Harrisburg.

SEEMS like this dry spell we been havin' so fur this summer is jest what it takes ter makes them yeller bodied grasshoppers plenty. Seth 'n' me hedn't no trouble gittin' a lot o' the critters in the grass field back o' his place. Then we headed fer the crick an' one o' the best fishin' trips we ever hed together. We got two light cane poles, right limber, an' with a good heavy thread line an' trout hooks we got all the tackle we need.

Well, o' course, first place we heads fer is the sunny hole. The crick's low an' clear, jest right fer fishin' a hopper. I gets set up to the head o' the hole jest where a weed bed slants in from the bank an' Seth he takes the lower end. Them hoppers sure was pop'lar with the sunnies an' rock bass thet day. First throw I makes up comes a wallopin' big sunnie broader'n the hand o' a big man. Jest when I'm a-landin' him I sees Seth busy an' he hooks a rock bass nine inches long. We musta ketched mebbe thirty sunnies an' rock bass in thet hole, but we only kept the biggest an' betwixt us we hed six fish.

Jerry, sez Seth ter me, let's us git some other fun with these here hoppers. So we heads fer a fast riffle, an' durn ef I didn't ketch a fallfish eighteen inches, an' Seth got him one about the same size.

Now then when a feller's fishin' hoppers, there ain't no tellin' what'll hit next. Seth was head o' me an' hed jest throwed inter a plout where the fast water slowed down when it hit the flat. Suddenlike thar was the most gosh-a-mighty swirl ye'd ever see, an' next minute Seth he set the hook in a bass thet I reckon weighed four pounds. Thet bass never stopped. He must be laughin' bass-like yet ef he saw Seth braced fer a minute tryin' ter hold him with thet light riggin' o' his'n. Him and the pole an' Seth parted company right fast, I'm tellin' ye. But ennyway, Seth sez as how he hed him on fer a second an' it was worth it.

When we run out o' hoppers, we each hed seven big sunnies an' rockies an' a fallfish apiece. Ef ye want some fun some day when the bass ain't hittin', take a tip from me an' give the hoppers a try.

FISH DISTRIBUTION—APRIL, MAY AND JUNE

Heavy distribution of brook trout, brown trout and rainbow trout, from fingerling stage to adult, marked the stocking program of the Fish Commission. Warm water species also were stocked heavily.

During April the hatcheries distributed 81,208 brook trout, from 6 to 10 inches; 399,225 brook trout fingerlings, 34,440 brown trout, 7 to 9 inches; 26,800 brown trout fingerlings, 20,770 rainbow trout, 8 to 9 inches; 150 adult pike perch averaging 16 inches in length, 176,600 minnows, 2½ to 6 inches, and 1,800 bullhead catfish averaging 9 inches.

May distribution included 956,115 brook trout, fingerling to 9 inches; 48,280 brown trout, fingerling to 8 inches; 3,640 rainbow trout, 8 to 9 inches; 12,477,228 pike perch, fry to 16 inches; 247,515,000 yellow perch, fry to 10 inches; 1,920 bluegill sunfish, 2 to 8 inches; 900 suckers averaging 10 inches; 7 pickerel, 16 inch average, and 200 bullhead catfish, averaging 10 inches.

In June, 9,400 brook trout averaging 8 inches, 292,850 brook trout fingerlings; 39,752 brown trout from 8 to 14 inches; 5,000 brown trout fingerlings, 19,450 rainbow trout from 9 to 14 inches, 1,075 adult suckers, and 90 muskellunge from 5 to 10 inches, were stocked in approved waters.

Following were the waters stocked in the various counties during the three months:

APRIL 1936

Adams County—rainbow trout, E. Br. Little Antietam Cr., trib. Little Antietam Creek; brook trout, Conewago Creek, trib. Susquehanna River.

Armstrong County — fingerling brook trout, Mill or Rinker Run, a trib. to Cowanshannock Creek, Hulings Run, tributary Allegheny River, Claypool Hollow Run, tributary to Armstrong Creek, Rockey Valley Hollow Run, tributary to Armstrong Creek, Elerenfell Hollow Run, tributary to Armstrong Creek, Irving Hollow Run, tributary Camp Run, Gearheart Run, tributary North Fork of Pine Creek, Heffelfinger Hollow Run, tributary North Fork of Pine Creek, Bullock Run, tributary North Fork of Pine Creek, Allen Run, tributary Scrubgrass Creek, Patrick Hollow Run, tributary Scrubgrass Creek, Brosives Hollow Run, tributary to Scrubgrass Creek, Laurel Run, tributary Scrubgrass Creek.

Beaver County—brown trout, Big Traverse Creek, tributary Raccoon Creek; rainbow trout, Brady Run or N. Br. Brady Run, tributary Beaver River.

Bedford County—brown trout, Yellow Creek, tributary Raystown Branch Juniata River, Raystown Branch, tributary Juniata River, Cumberland Valley Run or Shobers Creek or Shovers Creek, tributary Raystown Branch, Imerling Run, tributary Sunnings Creek; brook trout, Beaver Creek, tributary Yellow Creek, Deeters Run, tributary Raystown Branch Juniata River, Deaner Gap Run or Kinsey Gap Run, tributary Shawnee Creek.

Berks County—minnows, N. W. Branch Perkiomen Creek, tributary Perkiomen Creek, West Branch Pine Creek, tributary Pine Creek; yellow perch, Ontelaunce Lake, Maiden Creek, tributary Schuylkill River; brook trout, W. Branch Pine Creek, tributary Pine Creek, Scotts Run, tributary French Creek, Cold Run, tributary Hay Creek.

Blair County—brook trout, Frankstown Branch, Juniata River, tributary Juniata River, Pine Run, tributary Juniata River, Plum Creek, tributary Halter Creek, Sinking Creek or Sinking Valley Creek or Arch Spring Run, tributary Little Juniata River, Bobs Creek, tributary Dunnings Creek; fingerling brook trout, Calcy Run, tributary to Bells Run, Shaw Run, tributary to Bells Run, Lloydville Run, tributary Bell Run, Collier Run, tributary Bells Run, Clover Creek, tributary Juniata River, Pheasant Run, tributary Clover Creek, Gates Run, tributary to Clover Creek, Spring Run, tributary Piney Creek, Juniata Spring Run, tributary to Juniata Gap Run, Riggle Gap Run, tributary to East Branch Juniata River, Juniata Gap Run, tributary to East Branch Juniata River.

Bradford County—minnows, N. Branch Susquehanna River, tributary to Susquehanna River.

Bucks County—minnows, East Swamp Creek, tributary Perkiomen Creek; yellow perch, Lehigh Coal & Navigation Co. Canal, Maple Beech Pond, Silver Lake or Bristol Pond; brook trout, Cooks Creek or Durhams Creek, tributary to Delaware River.

Butler County — brown trout, Thorn Creek, tributary to Big Conoquenessing Creek; rainbow trout, Thorn Creek, tributary to Big Conoquenessing Creek; brook trout, Little Conoquenessing Creek, tributary Conoquenessing Creek, Thorn Creek, tributary Big Conoquenessing Creek.

Cambria County—fingerling brook trout, Snyder Run, tributary Chest Creek, Davis Run, tributary to Chest Creek, Tierney Run, tributary to Chest Creek, Noon Run, tributary to Chest Creek, Mud Lick Run, tributary to Beaver Dam Run, Right Branch of Sandy Run, tributary to Sandy Run, Left Branch of Sandy Run, tributary to Sandy Run, Sandy Run, tributary Clearfield Creek; brown trout, Slatelick Creek or Crooked Creek or Slate Run, tributary Beaver Dam Run, Clearfield Creek, tributary W. Branch Susquehanna River; rainbow trout, Sandy Run, tributary Clearfield Creek, Mudlick Creek, tributary Beaverdam Run; brook trout, Big Laurel Run, or Disart Run, tributary to Clearfield Creek, Spring Run, tributary to N. Branch of Little Conemaugh River, Sewart Run, tributary to South Branch of Blacklick Creek, Cedar Run, tributary to Beaverdam Run, North Branch of Little Conemaugh River, or Brannoff Creek or Barker Run, or Howells Creek, tributary to Conemaugh River, North Branch of Blacklick Creek or Vetera Branch, tributary to Blacklick Creek.

Cameron County—brook trout, E. Branch Hicks Run, tributary Hicks Run (Susquehannock State Forest), Lick Island, tributary First Fork Sinnemahoning Creek, Brooks Run, tributary First Fork Sinnemahoning Creek.

Carbon County — minnows, Pohopoco Creek or Big Creek, tributary Lehigh River, Wild Creek, tributary Pohopoco Creek; brown trout, Pohopoco Creek or Big Creek, tributary Lehigh River, Wild Creek, tributary Pohopoco Creek; rainbow trout, Pohopoco or Big Creek, tributary Lehigh River; brook trout, Big Bear Creek, tributary Lehigh River; fingerling brook trout, Spring Run, tributary Aquashicolo Creek, Water Trough Run, tributary Aquashicola Creek, Deep Run, tributary Aquashicola Creek, George's Run, tributary Aquashicola Creek, Smith's Run, tributary Aquashicola Creek, Blue Mountain Run, tributary Aquashicola Creek, Mehrkams Run, tributary Aquashicola Creek, Saw Mill Run, tributary Aquashicola Creek, Still Run, tributary Aquashicola Creek, Mine Hole Run, tributary Aquashicola Creek, Steep Run, tributary Aquashicola Creek, Hunters Creek, tributary Lehigh River, Strohl Valley Run, tributary Hunter Creek, Towamensing Creek, tributary Aquashicola Creek, Costenbader's Run, tributary Towmansing Creek, Joe Goucher Run, tributary Buckwa Creek, John Boyer Run, tributary Hunter Creek, Pury Smith Run, tributary Hunter Creek, N. A. Bolinger Run, tributary Hunter Creek; fingerling brown trout, Slate Run, tributary Pohopoco Creek, Lovetts Run, tributary Pohopoco Creek, Spruce Creek, tributary Pohopoco Creek, Berger's Run, tributary Pohopoco Creek, Hickory Run, tributary Pohopoco Creek, Pike's Run, tributary Pohopoco Creek, Stout's Run, tributary Pohopoco Creek, Deep Run, tributary Pohopoco Creek, Moyer's Run, tributary Pohopoco Creek.

Centre, County — rainbow trout, Bald Eagle Creek, tributary W. Branch Susquehanna River, Elk Creek, tributary Pine Creek, Stoney Creek, Kettle Dam, Hosler Dam on Half Moon Run; brook trout, Benner Run, tributary Little Moshannon Creek, Penns Creek, tributary Susquehanna River, Cold Stream, tributary Moshannon Creek, Little Fishing Creek, tributary Big Fishing Creek, White Deer Creek, tributary W. Branch Susquehanna River, Black Bear Run, tributary Moshannon Creek.

Chester County—yellow perch, Buck Run, tributary Doe Run, Muddy Creek, tributary E. Branch Octoraro Creek, E. Branch Brandywine Creek, tributary Brandywine Creek, N. Branch Brandywine Creek, tributary Brandywine Creek, Beaver Creek, tributary E. Branch Brandywine Creek; brook trout, White Clay Creek, tributary Christiana Creek.

Clarion County—brook trout, Mill Creek or Big Mill Creek, tributary Clarion River, Deer Creek, tributary Clarion River (In Kittanning Dist. State Forest), Canoe Creek, tributary Clarion River (In Kittanning Dist. State Forest), Toms Run, tributary Clarion River (Cooks Dist. State Forest); fingerling brook trout, Heffern Run, tributary to Toms Run, Douglas Run, tributary to Mill Creek, Town Run, tributary to Red Bank Creek, Brown Run, a tributary to Toms Run, Pine Run, tributary Red Bank Creek, Upsclyke Run, tributary Big Mill Creek, Jones Run, tributary Big Mill Creek, Step Creek, tributary to Paint or Licking Creek, Mahle Run, tributary to Paint Creek or Licking Creek, Rattlesnake Run, tributary to Paint Creek or Licking Creek, Deer Creek, tributary to Clarion River, Henry's Run, tributary to Clarion River, Pendelton Run, tributary

Big Mill Creek, Piney Creek, tributary to Clarion River, Leisure Run, tributary to Red Bank Creek, Nicholas Run, tributary to Toby Creek, Toby Creek, tributary to Clarion River, Hemlock Creek, tributary Cathers Run, Black Run, tributary to Cathers Run, Malley Run, tributary Toms Run, Toms Run, tributary to Clarion River, Young Run, tributary to Deer Creek, Judy Run, tributary Deer Creek, Little Deer Creek, tributary to Deer Creek, E. Branch of Deer Creek, tributary to Deer Creek, Schill Run, tributary Deer Creek, Muckenhall Run, tributary to Sandy Creek, Cogley Run, tributary Sandy Creek; rainbow trout, Deer Creek, tributary Clarion River.

Clearfield County — brook trout, Curry Run, tributary W. Branch Susquehanna River, Hazlet or Haslet Run, tributary W. Branch Susquehanna River, Bennets Branch, tributary Sinnemahoning Creek, E. Branch Mahoning Creek, tributary Mahoning Creek, S. Witmer or Wilmer Run, tributary N. Witmer Run, E. Branch Muddy Creek, tributary Muddy Creek; catfish, West Branch Susquehanna River, tributary Susquehanna River.

Clinton County—minnows, Kettle Creek, tributary W. Branch Susquehanna River; brown trout, Beech Creek, tributary Bald Eagle Creek; brook trout, Kettle Creek, tributary W. Branch Susquehanna River, Trout Fork or Trout Run, tributary Kettle Creek (Susquehannock State Forest), Paddy Run, tributary W. Branch Susquehanna River (Sproul State Forest), Chatham Run, tributary W. Branch Susquehanna River (Sproul State Forest).

Columbia County—brown trout, Fishing Creek, tributary N. Branch Susquehanna River; brook trout, Roaring Creek, tributary N. Branch Susquehanna River.

Crawford County—brook trout, McLaughlin Run or Boggs Creek, tributary to Thompson Run; pike perch, Pymatuning Dam; brown trout, Thompson Run, tributary Oil Creek; fingerling brook trout, Five Mile Run, tributary Oil Creek, Colbrook Run, tributary Patrick Creek.

Cumberland County—brown trout, Letort Spring, tributary to Conodoquinet Creek, Mountain Creek, tributary Yellow Breeches Creek, Yellow Breeches Creek, tributary Susquehanna River; brook trout, Big Spring Creek, tributary Conodoquinet Creek, Trindle Spring or Silver Spring, tributary Conodoguinet Creek, Mountain Creek, tributary Yellow Breeches Creek; rainbow trout, Big Spring, tributary Condoquinet Creek, Yellow Breeches Creek, tributary Susquehanna River.

Dauphin County—minnows, Swatara Creek, tributary Susquehanna River; rainbow trout, Clarks Creek, tributary Susquehanna River; brook trout, Clarks Creek, tributary Susquehanna River, Stoney Creek, tributary Susquehanna River.

Delaware County—brown trout, Ridley Creek, tributary Delaware River.

Elk County—rainbow trout, E. Branch Clarion River, tributary Clarion River; brook trout, Hoffman or Nigger Run, tributary Wilson Run (Allegheny National Forest), Straight Creek, tributary E. Branch Clarion River (Elk Dist. State Forest), Maxwell Run, tributary Clarion River, Kersey Run, tributary Bennets Branch, W. Branch Kersey Run, tributary Kersey Run, Rocky Run, tributary W. Branch Clarion River, Belmuth Run, tributary Lt. Toby Creek, Spring Creek, tributary Trout Run.

Erie County—fingerling brook trout, Steinhouser Branch tributary Whitney Run, Alder Run, tributary W. Branch French Creek, Hubble Run, tributary W. Branch French Creek, W. Branch Crooked Creek, tributary Crooked Creek, Elk Park Run, tributary Elk Creek, Mission Run, tributary Lake Erie, Brandy Run, tributary Elk Creek, Butternut Run, tributary Walnut Creek, McCray Run, tributary E. Branch French Creek, Whitney Run, tributary Spring Creek; brook trout, Beaver Run or Beaver Dam Run, tributary E. Branch French Creek, Riley Run, tributary Lake Erie, Trout Run, tributary Lake Erie, Bear Run, tributary Walnut Creek, Black Boydser Trout Run, tributary LeBeauf Lake, Little Conneautee Creek, tributary Conneautee Creek.

Fayette County—brook trout, Laurel Run or Morgan Run, tributary Youghiogheny River, Mountain Creek, tributary Georges Creek, South Fork of Mountain Creek, tributary Mountain Creek, Dunbar Creek, tributary Youghiogheny River; fingerling brook trout, Tub Run, tributary Youghiogheny River, Hall Run, tributary Youghiogheny River, Courduroy Run, tributary Dragoon Run, White Rock Run, tributary Rubles Run, Rubles Run, tributary Cheat River, Dragoon Run, tributary Rubles Run; brown trout, Dunbar Creek, tributary Youghiogheny River.

Forest County—fingerling brook trout, Hulings Run, tributary Maple Creek, Bear Pen Run, tributary to Maple Creek, Little Tionesta Creek, tributary Allegheny River, North Branch Hemlock Creek, tributary Hemlock Creek, Pithole Creek, tributary Allegheny River, McArthurs Run, tributary West Hickory Creek, Stewarts Run, tributary Allegheny River, Dawson Run, tributary Allegheny River, Tubs Run, tributary Allegheny River, Pigeon Run, tributary to Tubbs Run, Holding Run, tributary to Hemlock Creek, Chauncy Run, tributary to Hemlock Creek, Little Coon Creek, tributary to Tionesta Creek, Piney Creek, tributary Tionesta Creek, Peters Run, tributary Tionesta Creek, Moss Run, tributary Big Coon Creek, Hunter Run, tributary Allegheny River, Six Mile Run or Lt. Salmon Creek, tributary Salmon Creek (In Allegheny National Forest), Fork Run, tributary Tionesta Creek (In Allegheny National Forest), Bobbs Creek, tributary Tionesta Creek (Allegheny National Forest), Gilfoyle Run, tributary Spring Creek, (Allegheny National Forest), Wolfe Run, tributary Spring Creek (Allegheny National Forest), East Millstone Creek, tributary Clarion River (Allegheny National Forest), Muddy Fork Run, tributary to East Millstone Creek (Allegheny National Forest), Lick Run, tributary to East Millstone Creek (Allegheny National Forest), Sugar Camp Run, tributary to East Millstone Creek (Allegheny National Forest), Brush Creek, tributary West Millstone Creek, (Allegheny National Forest), Scott Run, tributary to West Millstone Creek (Allegheny National Forest), Graveyard Run, tributary Salmon Creek (Allegheny National Forest), Morrison Mill Run, tributary to Salmon Creek (Allegheny National Forest), North Salmon Creek, tributary to Salmon Creek (Allegheny National Forest), Porter Farm Run, tributary N. Salmon Creek (Allegheny National Forest), Blue Jay Creek, tributary Tionesta Creek (Allegheny National Forest).

Franklin County—rainbow trout, Falling Springs Creek, tributary Conococheague Creek; brook trout, Broad Run or Beaver Valley Run, tributary Conococheague Creek, E. Branch Little Antietam Creek, tributary Little Antietam Creek.

Fulton County—brook trout, Little Aughwick Creek, tributary Aughwick Creek; fingerling brook trout, Roaring Run, tributary Little Cove Creek, Little Spring Run, tributary Big Cove Creek, Big Spring Run, tributary Big Cove Creek.

Huntingdon County — rainbow trout, Greenwood Furnace Dam, Old Furnace Dam on Shaver Creek.

Indiana County — brook trout, Carney Run, tributary N. Branch Blacklick Creek, South Branch Twolick Creek, tributary Twolick Creek, Little Yellow Creek, tributary Yellow Creek; brown trout, Yellow Creek, tributary Twolick Creek.

Jefferson County—brook trout, Camp Run, tributary Sandylick Creek, Rattlesnake Run, tributary Little Toby Creek, North Fork of Red Bank Creek, tributary Red Bank Creek; fingerling brook trout, Bear Pen Creek, tributary N. Fork Creek, S. Branch Creek, tributary N. Fork Creek, McQuown Run, tributary Rattlesnake Creek, Rattlesnake Run, tributary Little Toby Creek, Callen Run, tributary Clarion River, Coder Run, tributary Little Toby Creek, Pine Run, tributary Clarion River, Clear Run, tributary Clarion River, Little Mill Creek, tributary Mill Creek.

Juniata County—brook trout, Big Run, tributary Lost Creek.

Lackawanna County—fingerling brook trout, E. Branch Choke Creek, tributary Choke Creek, W. Branch Choke Creek, tributary Choke Creek; brown trout, Gardners Creek, tributary N. Branch Susquehanna River; rainbow trout, Lehigh River, tributary Delaware River; brook trout, Choke Creek, tributary Lehigh River.

Lancaster County—minnows, Fishing Creek, tributary Susquehanna River, Big Chickens Creek, tributary Susquehanna River, Cocalico Creek, tributary Conestoga Creek; brown trout, Fishing Creek, tributary Susquehanna River, Big Chickies Creek, tributary Susquehanna River; yellow perch, Safe Harbor Dam on Susquehanna River, Conowingo Dam on Susquehanna River; brook trout, Tilt Hollow Run, tributary Pequea Creek, Pequea Creek, tributary Susquehanna River, Segleck Creek, tributary Furnace Run, Middle Creek tributary Cocalico Creek.

Lawrence County—fingerling brook trout, Reese Run, tributary Taylor Run, Taylor Run, tributary Slippery Rock Creek, Bentleys Run, tributary Taylor Run, Flack Run, tributary Taylor Run, Big Run, tributary Shenango River, Cotton Creek, tributary Big Run; brook trout, Taylor Run, tributary Slippery Rock Creek, Big Run, tributary Shenango River.

Lebanon County — yellow perch, Little Swatara Creek, tributary Swatara Creek, Stovers Dam, Water Works Dam, Lights or Kiwanis Dam; brook trout, Milbach Creek or Mill Creek or Newmantown Creek, tributary Tuepehocken Creek.

Lehigh County—brown trout, Jordan Creek, tributary Little Lehigh River.

Luzerne County—fingerling brook trout, Long Run, tributary Nescopeck Creek, Panther Run, tributary Nescopeck Creek, Spring Run, tributary Nescopeck Creek; rainbow trout, Lehigh River, tributary Delaware River; brook trout, Wrights Creek, tributary Lehigh River.

Lycoming County—brown trout, Loyalsock Creek, tributary W. Branch Susquehanna River; brook trout, Grays Run, tributary Lycoming Creek (Tiadaughton Dist. Forest), Hogland Run, tributary Lycoming Creek, Black Hole Creek, tributary W. Branch Susquehanna River.

McKean County—brown trout, South Fork Kinzua Creek, or Watermill Creek, tributary Kinzua Creek; rainbow trout, Kushequa Pond or Kinzua Creek, Portage Creek, tributary Allegheny River; fingerling brook trout, Bennetts Brook, tributary Tuna Creek, Winter Green Run, tributary Kinzua Creek, Flybrook Run, tributary Willow Creek, Windfall Creek, tributary Kinzua Creek, Whitney Run, tributary N. Branch Sugar Creek, Brown Run, tributary N. Branch Sugar Creek, Blind Robin, tributary Sugar Run, Upper Chappel, tributary Chappel Fork, Sartwell Creek, tributary Allegheny River; brook trout, Chappel Fork, tributary Kinzua Creek (Allegheny National Forest), Kinzua Creek, tributary Allegheny Creek, Fuller Brook, tributary Kinzua Creek, W. Clarion Creek, tributary W. Branch Clarion River.

Mercer County—brook trout, Little Sandy Creek, tributary Sandy Creek, Mill Creek, tributary French Creek, Lackawannack Creek, tributary Shenango River; brown trout, Little Neshannock Creek, tributary Neshannock Creek; rainbow trout, Little Neshannock Creek, tributary Neshannock Creek.

Mifflin County—brown trout, Long Meadow Run or Weber or Alfrata Run, tributary Jacks Run; brook trout, E. Branch Kishacoquillas Creek or Honey or New Lancaster Creek, tributary Kishacoquillas Creek.

Monroe County—fingerling brook trout, McMichaels Creek, tributary Brodheads Creek, Sambo Creek, tributary Brodheads Creek, Laurel Pine Run, tributary Brodheads Creek, Pensyl Creek, tributary McMichaels Creek, Marshalls Creeks, tributary Brodheads Creek, Scott Run, tributary Pocono Creek, Chappel Creek, tributary Buckwha Creek, Middle Creek, tributary Big Creek, Pohopoco Creek, tributary Big Creek, Dotters Creek, tributary Big Creek, Aquashicola Creek, tributary Lehigh River, Rattlesnake Creek, tributary Mill Creek, Mill Creek, tributary Brodheads Creek, Griscom Run, tributary Buck Hill Creek, Cranberry Creek, tributary Paradise Creek, Buck Hill Creek, tributary Brodheads Creek, Longs Run, tributary Brodheads Creek, Brodheads Creek, tributary Delaware River, Wagner Run, tributary Paradise Creek, Jennings Run, tributary Paradise Creek, Tank Creek, tributary Paradise Creek, Knall Creek, tributary Paradise Creek, Lake Creek, tributary McMichaels Creek, Meixel Valley Creek, tributary Buckwha Creek, Buckwha Creek, tributary Aquashicola Creek, Gum Creek, tributary Lake Creek; minnows, Big Bushkill Creek, tributary Delaware River; brown trout, Tunkhannock Creek, tributary Tobyhanna Creek, Pocono Creek, tributary Brodheads Creek, Buckhill Creek, tributary E. Branch Brodheads Creek; rainbow trout, Brodheads Creek, tributary Delaware River; brook trout, McMichaels Creek, tributary Pocono Creek, Aquashicola Creek, tributary Lehigh River, Cherry Creek, tributary Delaware River.

Montgomery County—minnows, Skippack Creek, tributary Perkiomen Creek; brook trout, Mill Creek, tributary Schuylkill River.

Montour County—catfish, Seibert's Pond.

Northampton County—brook trout, Little Martin Creek or Upper Martins Creek, tributary Martins Creek, Bertsch Creek, or Bercher Creek, tributary Lehigh River, Saucon Creek, tributary Lehigh River, Monocacy Creek, tributary Lehigh River, Greenawalts Creek, or Ackermanville Creek, tributary Waltz Creek, Waltz Creek or Delabo Creek, tributary Martins Creek; rainbow trout, Saucon Creek, tributary Lehigh River; minnows, Monocacy Creek, tributary Lehigh River; brown trout, Bushkill Creek, tributary Delaware River; yellow perch, Jacobus Creek, tributary Delaware River, Brays Lake or E. Bangor Lake, Gut Dam or Island Park Dam.

Perry County—brook trout, Sherman's Creek, tributary Susquehanna River.

Philadelphia County—brown trout, Wissahickon Creek, tributary Schuylkill River; rainbow trout, Wissahickon Creek, tributary Schuylkill River.

Pike County—fingerling brook trout, Cummings Creek, tributary Delaware River, Vander Mark Brook, tributary Delaware River, Anglers Run, tributary Dingman Creek, Little Mud Pond Run, tributary Little Bushkill Creek (Delaware Dist. State Forest), Five Mile Meadow Run, tributary Little Bushkill Creek (Delaware Dist. State Forest), Millers Brook, tributary Lackawaxen River (Delaware Dist. State Forest), Lords Brook, tributary Lackawaxen River, Blue Stone Run, tributary Delaware River, Panther Brook, tributary Delaware River, Burches Brook, tributary Taylor Creek (Delaware Dist. State Forest), Mile Brook, tributary Shohola Creek, Spring Brook, tributary Shohola Creek, Conasbaugh Brook, tributary Delaware River, Boyds Brook or Quinns Brook, tributary Saw Kill Creek, Red Run, tributary Coal Mine Brook; minnows, Dinghams Creek, tributary Delaware River, Big Bushkill Creek, tributary Delaware River, Peck's Pond (Shiners), Promised Land Lake (Shiners); catfish, Egypt Mill Dam or Egypt Beaver Dam; brown trout, Shohola Creek, tributary Delaware River; brook trout, Millrift Brook or Bushkill Brook, tributary Delaware River, Indian Ladder Creek or Becker Brook, tributary Delaware River.

Potter County—fingerling brook trout, Baker Hollow Run, tributary Fishing Creek, Trout Brook, tributary Allegheny River, Lenniger Run, tributary Allegheny River, Fish Hollow Run, tributary Fishing Creek; brown trout, Cross Fork Creek, tributary Kettle Creek; brook trout, W. Branch Crowley Run, tributary Portage Creek (Elk Dist. State Forest), E. Branch Crowley Run, tributary Portage Creek (Elk Dist. State Forest), E. Fork of First Fork tributary, First Fork (Susquehannock State Forest), Big Moores, tributary Prouty Brook (Susquehannock State Forest), Lyman Run, tributary W. Branch Pine Creek (Susquehannock State Forest), S. Fork of First Fork, tributary First Fork (Susquehannock State Forest), Little Kettle Creek, tributary Kettle Creek (Susquehannock State Forest), Reynoldstown Brook, tributary Genessee River, Luddington Brook, tributary Genessee River, Nine Mile, tributary Cushing Creek, Cushing Creek, tributary Brookland Branch, Fishing Creek, tributary Allegheny River, Nelson Run, tributary Mill Creek.

Schuylkill County — fingerling brook trout, (has no name) tributary Catawissa Creek, Young Run, tributary Little Swatara Creek, Herrings Run, tributary Swatara Creek, Bashore Run, tributary Little Swatara Creek, Frantz Run, tributary Little Swatara Creek; minnows, W. Branch Fishing Creek, or Jeffs Creek, tributary Fishing Creek, Evening Branch or Gold Mine Run, tributary Fishing Creek; yellow perch, Old Schuylkill Canal Basin, Patterson Dam No. 1, Patterson Dam No. 2, Patterson Dam No. 3, Pine Creek, tributary Schuylkill River, Rabbit Run, tributary Schuylkill River, Mahoning Creek, tributary Lehigh River; brook trout, Locust Creek, tributary Little Schuylkill River, Deep Creek or Deaf Creek, tributary Pine Creek, Bear Creek, tributary Schuylkill River.

Snyder County—brown trout, N. Branch Middle Creek, tributary Middle Creek.

Somerset County—brook trout, Breast Works Run, tributary Deeters Run, Brush Creek, tributary Wills Creek; fingerling brook trout, Bear Rock Run, tributary Coxes Run, Braum Run, tributary Bear Rock Run, Jones Mill Creek, tributary Laurel Hill Creek; brown trout, Clear Shade Creek, tributary Shade Creek, Wills Creek, tributary Potomac River.

Sullivan County—brook trout, Lick Creek or Leigh Creek, tributary Little Loyalsock Creek, Muncy Creek, tributary W. Branch Susquehanna River.

Susquehanna County—brown trout, Starrucca Creek, tributary N. Branch Susquehanna River; rainbow trout, Starrucca Creek, tributary N. Branch Susquehanna River; brook trout, E. Branch Lackawanna Creek, tributary Lackawanna River, Nine Partners Creek, tributary Butter Creek, W. Branch Lackawanna Creek, tributary Lackawanna Creek.

Tioga County—brook trout, Elk Run, tributary Pine Creek (Tioga State Forest), Asaph Run, tributary Marsh Creek, (Tioga State Forest), Phoenix Run, tributary Pine Creek (Tioga State Forest), Tioga Run, tributary Shemung River; minnows, Tioga River, tributary Shemung River, Asaph Creek, tributary Marsh Creek; rainbow trout, Pine Creek, tributary W. Branch Susquehanna River.

Union County—rainbow trout, Halfway Dam or Fourteen Mile Narrows Dam; brook trout, White Deer Creek, tributary W. Branch Susquehanna River.

Venango County—brook trout, Pithole Creek or May's Run, tributary Allegheny River, Cherry Run, tributary Oil Creek, Mill Creek, tributary Allegheny River, Little Sandy Creek or North Sandy Creek, tributary Sandy Creek, Middle Branch of Sugar Creek, tributary Sugar Creek, Pan-

ther Creek, or Prather Creek, tributary to East Branch of Sugar Creek; fingerling brook trout, Lower Two Mile Run, tributary Allegheny River, Wolf Branch Creek, tributary Horse Creek, Slate Run, tributary to Horse Creek, Cherry Run, tributary Oil Creek, West Branch Creek, tributary Cherrytree Run, Little Cherrytree Creek, tributary Cherrytree Run, Pithole Creek, tributary Allegheny River, Panther Run, tributary Allegheny River, Tarkill Run, tributary E. Sandy Creek, Norway Run, tributary Porkey Creek, Sage Run, tributary Allegheny River, Reese Run, tributary Hemlock Creek, North Branch of Hemlock Creek, tributary Hemlock Creek, Sandrock Run, tributary Hemlock Creek, Mays Run, tributary to Allegheny River, Scott Run, tributary Upper Two Mile Run, Reed Run, tributary Upper Two Mile Run, Lower Two Mile Run, tributary Allegheny River, Williams Run, tributary Little Scrubgrass Creek, McKinley Run, tributary Little Scrubgrass Creek, Bullion Run, tributary Big Scrubgrass Creek, Lyons Run, tributary Big Scrubgrass Creek, Victory Run, tributary Big Sandy Creek, Dennison Run, tributary Allegheny River, Little Scrubgrass Creek, tributary Allegheny River.

Warren County—brown trout, Caldwell Creek, tributary Oil Creek; brook trout, Fransworth Creek, tributary West Branch of Tionesta Creek (Allegheny National Forest), Lower Sheriff Creek, tributary Tionesta Creek, in Allegheny National Forest, Upper Sheriff Creek, tributary Tionesta Creek, in Allegheny National Forest, Ackley Run or Reynolds Run, tributary to Conewango Creek, Jackson Run, or Ackley Run, tributary Ackley Run, Dunn Run, tributary Allegheny River, Coffee Creek, tributary Brokenstraw Creek, Hemlock Run, tributary Allegheny River, Pine Creek, tributary Caldwell Creek, McGurie Run, tributary Allegheny River, Perry McGee Run, tributary Allegheny River, Tidioute Branch, tributary Allegheny River; fingerling brook trout, Hosmer Run, tributary Crouse Creek, Farren Run, tributary Spring Creek, Cool Springs, tributary Spring Creek, Toms Run, tributary Spring Creek, Prosser or Prosey Run, tributary Coffee Run; rainbow trout, Farnsworth Creek, tributary West Branch Tionesta, Pine Creek, tributary Caldwell Creek.

Wayne County—minnows, Lackawaxen River, tributary Delaware River; brown trout, Butternut Creek, tributary West Branch Wallenpaupack Creek, Wallenpaupack Creek, or S. Branch Wallenpaupack Creek, tributary Lake Wallenpaupack, W. Branch Wallenpaupack Creek, tributary Lake Wallenpaupack; rainbow trout, W. Branch Wallenpaupack Creek, tributary Lake Wallenpaupack, W. Branch Lackawaxen River, tributary Lackawaxen River; brook trout, W. Branch Dyberry Creek, tributary Dyberry Creek, S. Branch Calkins Creek or Boyds Mill Creek, tributary Calkins Creek, Calkins Creek or Milanville Creek, tributary Delaware River.

Westmoreland County—brown trout, Loyalhanna Creek, tributary Kiskiminitas River; brook trout, little Pucketo Creek, tributary Pucketo Creek; fingerling brook trout, Little Pucketo Creek, tributary Allegheny River, Camp Run, tributary Indian Creek, Pike Run, tributary Indian Creek.

Wyoming County—minnows, Meshoppen Creek, W. Branch or Whites Creek, tributary Meshoppen Creek, N. Branch Susquehanna River, tributary Susquehanna River; brown trout, Mehoopany Creek, tributary, N. Branch Susquehanna River; rainbow trout, Mehoopany Creek, tributary N. Branch Susquehanna River; brook trout, Bowmans Creek, tributary N. Branch Susquehanna River.

York County—brook trout, Fishing Creek, tributary Muddy Creek, Orson Run, tributary Muddy Creek, Toms Run, tributary Muddy Creek.

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Adams County—yellow perch, Marsh Creek, tributary Monocacy Creek, Little Marsh Creek, tributary Marsh Creek, S. Branch Conewago Creek, tributary Conewago Creek, Keagy's or Blue Water Lake, Bermudian Creek, tributary Conewago Creek, Big Conewago Creek, tributary Susquehanna River; fingerling brook trout, Geislman Run, tributary to Conewago Creek, Upper Conewago, tributary to Conewago Creek, Spring Run, tributary to Toms Creek, Copper Run, tributary Toms Creek, Middle Creek, tributary Marsh Creek, Lousy Run, tributary Conewago Creek, Possum Run, tributary Conewago Creek, Carbaugh Run, tributary Conococheague Creek, Little Marsh Creek, tributary to Marsh Creek, Toms Creek.

Allegheny County—yellow perch, North Park or John Marshal Lake, Allegheny River, Trees Boys Club Pond; pike perch, Allegheny River; german carp, Scotts Pond at Bridgeville; catfish, Trees Boys Club Pond; sunfish, Trees Boys Club Pond.

Armstrong County—yellow perch, Craig Run, tributary Cowanshannock, Allegheny River; fingerling brook trout, Sugar Camp Run, tributary Big Mahoning Creek, Foundry Run, tributary Branch Mahoning Creek, Pine Run, tributary Buffalo Creek; pike perch, Allegheny River.

Beaver County—yellow perch, N. Fork Little Beaver River, tributary Little Beaver River; fingerling brook trout, Brady's Run, tributary Beaver River; pike perch, N. Fork Little Beaver River, tributary Beaver River; german carp, Little Beaver River, Brush Creek, Shroads Pond.

Bedford County—yellow perch, Thomas W. Koon Lake, Lake Gordon, Keagy Dam on Yellow Creek; fingerling brook trout, Openheimer Run, tributary Dunnings Creek, Younts Run, tributary Dunnings Creek, Brush Run, tributary Dunnings Creek, Ault Run, tributary Cove Creek, Snake Spring Valley Run, tributary Raystown Branch, Cove Creek, tributary Raystown Branch Juniata River, Ott-Town Spring Run, tributary Cove Creek, Amicks Run, tributary Raystown Branch Juniata River, Strominger Run, tributary Shobers Run or Cumberland Valley Run, Arnolds Run, tributary Shobers Run or Cumberland Valley Run, Sallys Run, tributary Raystown Branch Juniata River; pike perch, Gordon Lake, Raystown Branch Juniata River, tributary Juniata River.

Berks County—brook trout, Baptisimal Run, tributary French Creek, Hopewell Creek, tributary French Creek; fingerling brook trout, Kaufmans Run, tributary to Manatawny Creek, Hoffmaster Run, tributary Monocacy Creek, Furnace Run, tributary Manatawney Creek, Little Manatawney Creek, tributary Manatawney Creek, Steinbach's Run, tributary Northkill Creek, Licking Creek, tributary Northkill Creek; fingerling brook trout, Deglers Run, tributary to Northkill Creek, Shubert Run, tributary Northkill Creek, Mill Creek, tributary Northkill Creek, Limekiln Creek, tributary Monocacy Creek, Little Lehigh, tributary Lehigh River, Seidels Run, tributary Lehigh River, Indian Corn Run, tributary Schuylkill River, Hasslers Run, tributary Mill Creek, Bausher's Run, tributary Mill Creek, Willow Creek, tributary Maiden Creek.

Blair County—yellow perch, Williamsburg Dam on Frankstown Branch of Juniata River; fingerling brook trout, S. Branch Blairs Creek, tributary Blairs Creek, N. Branch Blairs Creek, tributary Blairs Creek, Adams Run, tributary Blairs Creek; pike perch, Frankstown Branch Juniata River, tributary Juniata River, Williamsburg Dam on Frankstown Branch Juniata River.

Bradford County—yellow perch, Cooks Pond, Rockwell Pond, Moody Pond or Spring Pond, Stowell Pond, Beaver Meadow Pond, Sunfish Pond, Mountain Lake, Blakeslee Pond, Lake Wesauking, Nephawin Lake; fingerling brook trout, Runnerfield Creek, tributary Susquehanna River, Coal Creek, tributary Camp Town Creek, Camp Town Creek, tributary Wyalusing Creek, Pine Swamp, tributary Shraders Creek, Millstone Run, tributary Towanda Creek, Jackson Valley, tributary Wyalusing Creek; Pike perch, N. Branch Susquehanna River, tributary Susquehanna River.

Bucks County—fingerling brook trout, Springtown Run, tributary Cooks Creek, Schleiffers Run, tributary Cooks Creek, Beaver Run, tributary Cooks Creek, Spring Run, tributary Mill Creek, Pine Run, tributary Neshaminy Creek, Cooks Creek, tributary Delaware River; pike perch, Delaware River; yellow perch, Neshaminy Creek, tributary Delaware River, Delaware River, Tulpchocken Creek, tributary Manatawney Creek.

Butler County—yellow perch, Boydstown Dam, Oneida Dam, Harmony Junction Reservoir, Buhl's Channel, Thorn Run Dam; fingerling brook trout, North Branch of Slippery Rock Creek, tributary Slippery Rock Creek, Crab Run, tributary Little Conoquenessing Creek, Scholars Run, tributary Little Conoquenessing Creek, Glade Run, tributary Big Conoquenessing Creek, Pine Run, tributary Big Conoquenessing Creek, N. Branch of Bear Creek, tributary Bear Creek, Semicolon Run, tributary Little Conoquenessing Creek, Yellow Creek, tributary Conoquenessing Creek, Duffey Run, tributary Big Conoquenessing Creek, Patterson Run, tributary Thorn Run, Cornplanter Run, tributary Buffalo Creek, Long Run, tributary Buffalo Creek.

Cambria County—fingerling brook trout, Little Paint Creek, tributary Paint Creek, Salt Lick Run, tributary Little Conemaugh River, Lydia Run, tributary Salt Lick Run, Baker Run, Chest Creek, tributary Clearfield Creek, Davis Run, tributary Chest Creek, N. Branch Black Lick, tributary Black Lick Creek, Roaring Run, tributary Little Conemaugh River, Stewart Run, tributary North Fork of Blacklick Creek,

Williams Run, tributary Blacklick Creek, Left Fork of Moels Run, tributary Noels Creek or Little Conemaugh River, Little Conemaugh River or Noels Creek, tributary Conemaugh River, Mudlick Run, tributary Beaver Dam Run, Kill Buck Run, tributary Clearfield Creek, Rough Run, tributary Chest Creek, Glade Run, tributary Little Conemaugh River, Rachel Run, tributary Little Conemaugh River; yellow perch, Shaft Dam or Pennsylvania Coal & Coke Co. Dam, N. Branch Little Conemaugh River, tributary Little Conemaugh River, St. Francis Lake, Walters Dam, Chest Creek, tributary W. Branch Susquehanna River, New Borough Dam, Dooman Dam or Duman Dam.

Carbon County—yellow perch, Buckwa Creek, tributary Aquashicola Creek, Kittaotiny Pond, Mahony Creek, tributary Lehigh River, Pohopaco Creek, tributary Lehigh River, Round Pond, Harmony Lake; fingerling brook trout, Kieper Run, tributary Mud Run, Porters Run, tributary Lehigh River, Silk Mill Creek, tributary Lehigh River, Roberson Creek, tributary Lehigh River, Bull Run, tributary Lehigh River, Pine Run, tributary Lehigh River, Doc Salt Run, tributary Big Creek, Bull Run, tributary Pohopoco Creek, Mentz Run, tributary Mahoney Creek, Beaver Run, tributary Lehigh River, Long Run, tributary Canal, Big Creek, tributary Lehigh River, Fourth Run, tributary Hays Creek, Pine Run, tributary Big Creek, Kitty Run, tributary Wild Creek, Panther Creek, tributary Mud Creek, Yellow Run, tributary Stoney Creek, Bear Creek, tributary Lehigh River, Swamp Creek, tributary Stoney Creek, Saw Mill Creek, tributary Big Creek, Patsy Run, tributary Wild Creek, Beaver Run, tributary Mahoning Creek, Stoney Creek, tributary Lehigh River, Mud Run, tributary Lehigh River, Drakes Creek, tributary Lehigh River; pike perch, Lizard Creek, tributary Lehigh River.

Centre County—yellow perch, Moshannon Lake (Moshannon District State Forest), Bakers Dam, Sheffield Creamery Dam, Rotes Mill Dam; fingerling brook trout, Tom Tit, tributary Cold Stream (State Game Land, Potter Stream, tributary Sinking Creek (Penna. Forest District), Boles Gap Run, tributary Sinking Creek (Penna. Forest District), Sinking Creek, tributary Penna. Creek (Penna Forest District), Hutton Run, tributary Six Mile Run (Moshannon State Forest District), Corbin Run tributary Six Mile Run (Moshannon State Forest District), Benner Run, tributary Black Moshannon (Moshannon State Forest District), Wallace Run, tributary Bald Eagle Creek, Little Sugar Valley, tributary Fishing Creek, Curtin Run, tributary Bald Eagle Creek, Little Fishing Creek, tributary Fishing Creek, Decker Valley Run, tributary Synegogue Creek, Browns Bottom, tributary Synegogue Creek, Ripka Run, tributary Penns Creek, Zerby Run, tributary Penns Creek, Cold Stream, tributary Big Moshannon Creek, Wolf Hollow Run, tributary Big Fill Run, Big Fill Run, tributary Bald Eagle, Smays Run, tributary Moshannon Lake; eels, Bald Eagle Creek, tributary W. Branch Susquehanna River, Moshannon Lake; suckers, Moshannon Lake.

Chester County—fingerling brook trout, Valley Creek, tributary Schuylkill River, Church Run, tributary French Creek, N. Branch Creek, tributary French Creek, Pine Swamp Run, tributary French Creek, E. Branch Creek, tributary French Creek, Ecco Park Run, tributary to French Creek, French Creek, tributary Schuylkill River, W. Branch Creek, tributary French Creek, Leech Run, tributary Octorora Creek, Mackey Run, tributary White Clay Creek, Red Clay Creek, tributary Christiana Creek, Baker's Run, tributary White Clay Creek, Valley Run, tributary Red Clay Creek, Schlegle Run, tributary White Clay Creek, Pocopson Creek, tributary Brandywine Creek, Logans Run, tributary Doe Run, Saul Run, tributary W. Branch Brandywine Creek, Indian Run, tributary N. Branch Brandywine Creek, Broad Run, tributary W. Branch Brandywine Creek, North East Run, tributary Octorora Creek, Laddie's Run, tributary to W. Branch Brandywine Creek, Hurley Run, tributary to W. Branch Brandywine Creek, Hatfield Run, tributary W. Branch Brandywine Creek, Mud Run, tributary W. Branch Brandywine Creek, Broad Run, tributary W. Branch Brandywine Creek; sunfish, Beaver Creek, tributary Brandywine Creek, Buck Run, tributary Doe Run; yellow perch, Black Dam, E. Branch Octorora Creek, Schuylkill Canal, Brandywine Creek, tributary Christiana Creek, French Creek, tributary Schuylkill River; rainbow trout, Valley Creek, tributary Schuylkill River.

Clarion County—yellow perch, Allegheny River, tributary Ohio River, Heufner Dam, Red Bank Creek, tributary Clarion River, Licking Creek, tributary Clarion River, Clarion River, tributary Allegheny River; pike perch, Clarion River, tributary Allegheny River, Allegheny River, tributary Ohio River.

Clearfield County—fingerling brook trout, Peas Run, tributary Whiskey Creek, Frederick Run, tributary Whiskey Creek, Smith Run, tributary Whiskey Creek, Lost Run, tributary Clover Run, Pine Run, tributary Clearfield Creek, Lost Run, tributary Clearfield Creek, Buck Run, tributary Porters Run, Upper Potts Run, tributary Big Potts Run, Heath Run or Hess Run, tributary Bennetts Branch, Mountain Run, tributary Bennetts Branch, Cole Run, tributary Sandy Lick Creek, Burnt Cabin Run, tributary Luthersburg Branch, Little Montgomery Creek, tributary Cupler Run (Moshannon State Forest District), Little Stoney Creek, tributary Anderson Creek (Moshannon State Forest District) Stone Run, tributary Lick Run (Moshannon State Forest District), Black Bear Creek, tributary Big Moshannon Creek (Moshannon State Forest District), Shaws Run, tributary Stone Run (Moshannon State Forest District), Crooked Run, tributary Big Trout Run, Little Trout Run, tributary Big Trout Run, Mountain Run, tributary Bennetts Branch, Alex Branch tributary Trout Run, Sanders Run, tributary Laurel Run, Little Laurel Run, tributary Laurel Run; yellow perch, Chest Creek, tributary W. Branch Susquehanna River, Berndale Lake, Tannery Dam, Sabula Dam; pike perch, Little Clearfield Creek, tributary Clearfield Creek.

Clinton County—yellow perch, Axe Factory Dam, Bald Eagle Canal; fingerling brown trout, Young Women's Creek, tributary W. Branch Susquehanna River.

Columbia County—fingerling brook trout, Cole Creek, tributary Fishing Creek, West Creek, tributary Fishing Creek, Creasy Run, tributary Fishing Creek, Quinn Branch tributary E. Branch Fishing Creek, Plummer Run, tributary W. Branch Fishing Creek, Reese Run, tributary Fishing Creek, Laydon Run, tributary Fishing Creek, Slip Run, tributary Fishing Creek, Hemlock Run, tributary Fishing Creek, Shingle Mill Run, tributary Fishing Creek, E. Branch Fishing Creek, tributary Fishing Creek; yellow perch, Huntingdon Creek, tributary Fishing Creek, Fishing Creek, tributary N. Branch Susquehanna River.

Crawford County—fingerling brook trout, Mill Run, tributary French Creek, Woodcock Creek, tributary French Creek, North Fork of Sugar Creek, tributary Sugar Creek, Van Horn Run, tributary French Creek, Watson Run, tributary Conneaut Lake Outlet, Gravel Run, tributary French Creek, Lake Creek, tributary Sugar Lake, Hunter Run, tributary Little Sugar Creek, Kelly Run, tributary Muddy Creek, N. Branch of Woodcock Creek, tributary French Creek, Teele or Temple Run, tributary Muddy Creek, Navy Run, tributary E. Branch of Muddy Creek, Mackey Run, tributary Big Sandy Creek, Brookhauser Run, tributary French Creek, Boozon Run, tributary Little Sugar Creek, Little Sandy Creek, tributary Big Sandy Creek; pike perch, Pymatuning Reservoir; yellow perch, Neva Dam on Conneaut Creek, Pymatuning Reservoir, Oil Creek, tributary Allegheny River, French Creek, tributary Allegheny River, Canadohta Lake, Drakes Mill Dam, Sugar Lake, Clear Lake, Pymatuning Dam, Espyville; pike perch, French Creek, tributary Allegheny River, Canadohta Lake, Crooked Creek, tributary Little Shenango River, Oil Creek, tributary Allegheny River, Conneaut Lake, Pymatuning Reservoir, Pymatuning Dam, Espyville.

Cumberland County—yellow perch, Fullers Lake, Mountain Creek, tributary Yellow Breeches Creek, Carlisle Water Company Dam; pike perch, Susquehanna River; fingerling brook trout, Hunters Run, tributary Yellow Breeches Creek, Cockley's Run, tributary Yellow Breeches Creek, Silver Springs, tributary Conodoquinet Creek, Trindle Spring, tributary Silver Spring, Cedar Run, tributary Yellow Breeches Creek, Lutz Run, tributary Yellow Breeches Creek, Cold Spring Run, tributary Yellow Breeches Creek, Lines Run, tributary Conodoguinet Creek, Bonny Brook, tributary Letort Spring, Green Spring, tributary Conodoguinet Creek, Watery Hollow, tributary Yellow Breeches Creek.

Dauphin County—fingerling brook trout. Iron Run, tributary Monodas Creek, Monodas Run, tributary Swatara Creek, Doc Smith's Run, tributary W. Branch Rattling Creek, Canoe Run, tributary W. Branch Rattling Creek, Hawks Nest Run, tributary W. Branch Rattling Creek, Minnicks Run, tributary W. Branch Rattling Creek, Mud Run, tributary W. Branch Rattling Creek, Cat-tail Run, tributary Powells Creek, W. Branch Forks Creek, tributary Powells Creek, Smoke Hole Run, tributary Powells Creek; pike perch, Susquehanna River; suckers, Spring Creek, Manada Creek; yellow perch, Highspire Canal Reservoir, Susquehanna River, Conewaga Creek, tributary Susquehanna River.

Delaware County—yellow perch, Springfield Water Co. Dam on Crum Creek.

Elk County—fingerling brook trout, Rocky Run, tributary W. Branch Clarion River, Wolf Run, tributary W. Branch Clarion River, Lannigan Creek, tributary W. Branch Clarion River, Middle Fork Creek, tributary E. Branch Clarion River, W. Branch Hicks Run, tributary Hicks Run, Deerlick Creek, tributary Laurel Run, Horseshoe Run, tributary Kersey Run, Aumen Run, tributary Kersey Run, Spring Run, tributary West Kersey Run, Little Wolf Lick Creek, tributary Wolf Lick Creek (Elk District State Forest), Little Bear Run, tributary Bear Run (Elk District State Forest), Water Tank Run, tributary Elk Creek (Elk District State Forest), Spring Run, tributary Bennetts Branch (Elk District State Forest), Laurel Run, tributary Elk Creek (Elk District State Forest), Big Run, tributary Sinnemahoning Creek (Elk District States Forest), Windfall Run tributary Driftwood Creek (Elk District State Forest), Driftwood Creek, tributary Sinnemahoning Creek (Elk District State Forest), Hell Fire Run, tributary Trout Run (Elk District State Forest), Finland Run, tributary Straight Creek (Elk District State Forest), Wellendorf Run, tributary Straight Creek (Elk District State Forest), Long Branch Run, tributary Crooked Creek (Elk District State Forest), Sand Lick Run, tributary West Creek (Elk District State Forest), Seife Run, tributary Trout Run (Elk District State Forest), Sawdust Run, tributary Trout Run (Elk District State Forest), Bear Run, tributary West Creek (Elk District State Forest), Little Medix Run, tributary Big Medix Run (Elk District State Forest), Whipporwill Creek, tributary Hicks Run (Elk District of State Forest), Smith Run, tributary Spring Run (Elk District State Forest); yellow perch, Black Swamp Pond, Ridgway Water Works Reservoir.

Erie County—yellow perch, W. Branch French Creek, tributary French Creek, Lake Pleasant, Albion Dam on Runkon Creek, Conneaute Creek, tributary Lake Erie, Edinboro Lake, French Creek, tributary Allegheny River, Le Beouf Creek; pike perch, W. Branch French Creek, tributary French Creek, Conneaute Creek, tributary Lake Erie; brook trout, S. Branch French Creek, tributary French Creek, E. Branch LeBoeuf Creek, tributary LeBoeuf Creek, Shaws Run, or Black Run, tributary LeBoeuf Lake on North Side, Darrow Brook or Finn Brook, tributary W. Branch French Creek, Hatch Hollow Run or Alder Run, tributary French Creek, Hubble Run or Alder Run, tributary French Creek, Brandy Run, tributary Elk Creek, Crooked Creek, tributary Lake Erie.

Fayette County—fingerling brook trout, McIntire Run, tributary Big Sandy Creek, Big Sandy Creek, tributary Cheat River, Bartons Run, tributary Georges Creek, Piney Creek, tributary Georges Creek, Dunham Run, tributary Big Sandy Creek, Glade Run, tributary Little Sandy Creek, Little Sandy Creek, tributary Big Sandy Creek, Fulton Run, tributary Mill Run, Laurel Run, tributary Buck Run, Middle Fork Run, tributary Buck Run, Bucks Run, tributary Indiana Creek, Little Back Creek, tributary Back Creek, Neals Run, tributary Back Creek, Nicala Run, tributary Clay Run, Clay Run, tributary Mill Run, White Creek, tributary Mountz Creek, Jonathan Run, tributary Dunbar Creek, Haney Run, tributary Dunbar Creek, Morgan Run, tributary Dunbar Creek, Poplar Run, tributary Indian Creek, Newmyer Run, tributary Poplar Run, Tates Run, tributary Indian Creek, Ricter Run, tributary Indian Creek, Raster Run, tributary Indian Creek, Mounts Creek, tributary Youghiogheny River.

Forest County—pike perch, Allegheny River, tributary Ohio River; yellow perch, Allegheny River; fingerling brook trout, Little Hickory Creek, tributary Allegheny River (Allegheny National Forest), Johns Run, tributary Tionesta Creek, Jug Handle Run, tributary Tionesta Creek; brook trout, Tubbs Run, tributary Allegheny River.

Franklin County—fingerling brook trout, Nunery Run, tributary W. Branch Little Antietam Creek, Foltz's Run, tributary W. Branch Little Antietam Creek, Funks Run, tributary W. Branch Little Antietam Creek, Good's Run, tributary E. Branch Little Antietam Creek, Red Run, tributary E. Branch Little Antietam Creek, Passes Run, tributary W. Branch Little Antietam Creek, Hess Run, tributary E. Branch Little Antietam Creek, Bailey's Reservoir Run, tributary E. Branch Little Antietam Creek, Muddy Run, tributary Conococheague Creek, Burkholders Run, tributary W. Branch Conococheague Creek, Dennis Creek, tributary W. Branch Conococheague Creek, Falling Springs Creek, tributary W. Branch Conococheague Creek, Conococheague Creek, tributary Potomac River, Pine Run, tributary W. Branch Conococheague Creek, Falling Spring, tributary Conococheague Creek, Burkholder Run, tributary to W. Branch Conococheague Creek, Dennis Creek, tributary Bach Creek, Dickey Run, tributary W. Branch Conococheague Creek; yellow perch, E. Branch Little Antietam Creek, tributary Little Antietam Creek, Indian Lake, Conodoguinet Creek, tributary Susquehanna River, Muddy Creek, tributary Conodoguinet Creek, Conococheague Creek, or E. Branch Conococheague Creek.

Green County—yellow perch, Browns Fork Creek or Browns Creek, tributary S. Fork Ten Mile Creek, S. Fork Wheeling Creek or Dunkard Fork Creek or Bryan Creek, tributary N. Fork Dunkard Creek, N. Fork of Dunkard Creek or N. Fork Wheeling Creek, tributary N. Fork Dunkard Creek, Wheeling Creek, tributary Ohio River, S. Fork Ten Mile Creek, tributary Ten Mile Creek, Pennsylvania Fork Fish Creek, tributary Fish Creek, Dunkard Fork Creek, tributary Monongahela River, Muddy Creek, tributary Monongahela River, Whiteley Creek, tributary Monongahela River.

Huntingdon County — pike perch, Penn Central Dam on Frankstown Branch Juniata River, Penn Central Dam on Raystown Branch Juniata River, Raystown Branch Juniata River, tributary Juniata River, Juniata River, tributary Susquehanna River; yellow perch, Penn Central Dam on Frankstown Branch Juniata River, Penn Central Dam on Raystown Branch Juniata River; fingerling brook trout, Gardner Run, tributary to Shavers Creek, McClain Run or Barrie Run, tributary Little Juniata River, Broad Mountain Run, tributary Standing Stone Creek, Laurel Run, tributary Standing Stone Creek, Painters Stream, tributary Aughwick Creek, Bookers Run, tributary Aughwick Creek, Gabert Run, tributary Aughwick Creek, Carothers Run, tributary Old Womans Run, Sandy Run, tributary Black Log Creek, West Licking Creek, tributary Juniata River, Sugar Run, tributary Juniata River, German Valley Run, tributary Aughwick Creek, Old Womans Gap Run, tributary Aughwick Creek.

Indiana County—yellow perch, Cush Cushion Creek, tributary W. Branch Susquehanna River, Yellow Creek, tributary Two Lick Creek, Little Mahoning Creek, tributary Mahoning Creek; fingerling brook trout, Carr Run, tributary Big Mahoning Creek, Pierce or Bish Run, tributary Little Mahoning Creek, Little Mudlick Creek, tributary Little Mahoning Creek, N. Branch Little Mahoning Creek, tributary Mahoning Creek.

Jefferson County—fingerling brook trout, McConnell Run, tributary Sandy Lick, Kase Run, tributary Sandy Lick, Five Mile Run, tributary Sandy Lick, Horum Run, tributary Sandy Lick, Baker Run, tributary Little Sandy Lick Creek, Middle Branch Creek, tributary Little Sandylick Creek, Clutz Run, tributary Little Sandylick Creek, Little Sandy Run, tributary Little Sandylick Creek, Hickox Run, tributary Little Sandylick Creek, Burket Run, tributary Little Sandy Creek, Lick Run, tributary Little Sandy Creek, Miller Run, tributary E. Branch Mahoning Creek, Whitney Run, tributary E. Branch Mahoning Creek, McCardey Run, tributary E. Branch Mahoning Creek; yellow perch, Sandy Lick, tributary Red Bank Creek, Reeds Dam, Borough Water Supply Dam—Falls Creek, Little Sandylick, tributary Little Sandy Creek, Brookville Water Supply Dam, Red Bank Creek, tributary Clarion River.

Juniata County—fingerling brook trout, Suloff Run, tributary Hornings Run, Hornings Run, tributary Juniata River, Cedar Springs Run, tributary Juniata River, Lost Creek, tributary Juniata River, Grass Run, tributary Lost Creek, Willow Run, tributary Tuscarora Creek, Walls Run, tributary Tuscarora Creek, Blain Hollow Run, tributary Horse Valley Run, Look Run, tributary Horse Valley Run, Duncan Run, tributary Tuscarora Creek, Smith's Run, tributary Horse Valley Run, Horse Valley Run, tributary Tuscarora Creek, Eshes Run, tributary Tuscarora Creek, Gillford Run, tributary Tuscarora Creek, Klines Run, tributary Tuscarora Creek, Whartons Run, tributary Tuscarora Creek, Spawnhowers Run, tributary Lost Creek; pike perch, Juniata River, tributary Susquehanna River, Pomeroys Dam, Tuscarora Creek; yellow perch, Juniata River, tributary Susquehanna River, Pomeroys Dam on Tuscarora Creek, Licking Creek, tributary Tuscarora Creek.

Lackawanna County—fingerling brook trout, Small Spring Run, tributary Susquehanna River, Gardner Creek, tributary Susquehanna River, Ciss Creek, tributary Roaring Brook, Bear Brook Creek, tributary Roaring Brook, Emerson Creek, tributary Roaring Brook, Frytown Creek, tributary Roaring Brook, McDonald's Creek, tributary Roaring Brook, Hollister Brook, tributary Roaring Brook, Bear Run, tributary

tary, Roaring Brook; yellow perch, Lower Klondyke Lake, Hohnson Lake, East End Lake, Moosic Lake, Chapman Lake, Heart Lake, Crystal Lake, Newton Lake, Baylors Pond, Mud Pond, Wind Fall Pond or Kewanna Pond, Handsome Lake, Sicklers Pond, Mountain Lake, Deer Lake or Crooked Pond, Sheridan Lake.

Lancaster County—pike perch, Susquehanna River, Conewingo Dam, on Susquehanna River, Safe Harbor Dam, on Susquehanna River; yellow perch, Conewingo Dam on Susquehanna River, Holtwood Dam on Susquehanna River, Safe Harbor Dam on Susquehanna River, Wangers Mill Dam on Conestoga Creek, Cocalico Creek, tributary Conestoga Creek, Stovers Dam, Pequa Creek, tributary Susquehanna River, Mill Creek, tributary Conestoga Creek, Conestoga Creek, tributary Big Conestoga Creek, Big Chickies Creek, tributary Susquehanna River, Little Chickies Creek, tributary Big Chickies Creek; fingerling brook trout, Steinman's Run, tributary Pequea Creek, Indian Run, tributary Middle Creek, Seglock Creek, tributary Middle Creek, Tucquan Creek, tributary Pequea Creek, Middle Run, tributary Pequea Creek, Walnut Creek, tributary Hammer Creek, Black Horse Run, tributary Pequea Creek, Hohers Run, tributary Pequea Creek, Trout Creek, tributary Cocalico Creek, Middle Creek, tributary Cocalico Creek, Welsh Mountain Run, tributary Mill Creek, Popular Run, tributary Hammer Creek, Snavely's Run, tributary Pequea Creek, Charles Run, tributary Donegal Creek, Gladfelters Run, tributary Susquehanna River, Spring Ike Martin Creek, tributary Muddy Creek, Walnut Run, tributary Little Beaver Creek, Valley Run, tributary Octorora Creek, Fetterville Run, tributary Cedar Run, Longs Run, tributary Little Conestoga Creek, Herr's Run, tributary Little Conestoga Creek, Mill Creek, tributary Conestoga Creek, Brackville Run, tributary Pequea Creek, Fishing Creek, tributary Susquehanna River; rainbow trout, Fishing Creek, tributary Susquehanna River.

Lawrence County—fingerling brook trout, Fisher Run or Stoner Run, tributary Slippery Rock Creek, Cochran Run, tributary Shenango River, Little Neshannock Creek, tributary Neshannock Creek, Deer Creek, tributary Slippery Rock Creek; yellow perch, Quarry Hole No. 5 Bessemer, Carbon Quarry Pool Hillsville, North Fork Little Beaver River, tributary Beaver River, Shenango River, tributary Beaver River, Cement Dam on Big Run, Neshannock Creek, tributary Shenango River; pike perch, North Fork Little Beaver River, tributary Beaver River, Shenango River, tributary Little Beaver River; german carp, Shup Hill Quarry Lehigh Cement Pond.

Lebanon County—pike perch, Little Swatara Creek, tributary Swatara Creek; yellow perch, Conewago Creek, Stracks Dam; fingerling brook trout, Hammer Creek, tributary Cocalico Creek, Bachmans Creek, tributary Snitz Creek, Tulpehocken Creek, tributary Schuylkill River.

Lehigh County—fingerling brook trout, Little Lehigh River, tributary Lehigh River, S. Branch Saucon Creek, tributary Saucon Creek, Spring Creek, tributary Lehigh River, Doctor's Run, tributary Ontelawnee Creek, Mountain Run, tributary Ontelawnee Creek, Ontelawnee Creek, tributary Maiden Creek, Little Trout Run, tributary Trout Run, Welshtown Run, tributary Trout Run, Furnace Creek, tributary Trout Run, Brenigs Run, tributary Spring Run, Trout Run, tributary Lehigh River, Saucon Creek, tributary Lehigh River, Catassauqua Creek, tributary Lehigh River, Cedar Creek, tributary Little Lehigh River, Helfrichs Spring, tributary Jordan Creek, Locust Branch Saucon Creek, tributary Saucon Creek, Swauban Creek, tributary Little Lehigh River, Reservoir Run, tributary Swauban Creek, Coplay Creek, tributary Lehigh River; yellow perch, Union Terrace Pond, Jordan Creek, tributary Lehigh River, Indian Creek, Park Dam, Ormrod Mine Hole, Alburtis Mine Hole, Hoosen Creek, Ontelounce Creek, tributary Maiden Creek, Little Lehigh Creek, Henninger Mine Hole; catfish, Union Terrace Pond — on Cedar Creek; sunfish, Union Terrace Pond.

Luzerne County—fingerling brook trout, Wrights Creek, tributary Lehigh River, Bull Run No. 1, tributary Pine Run, Bull Run No. 2, tributary Pine Run, Bear Creek, Lehigh River, Linesville Run, tributary Lehigh River, Hunlock Creek, tributary Susquehanna River, Peggy Hunter Creek, tributary Hunlock Creek, Phillips Creek, tributary Kitchen Creek, Maple Run, tributary Huntingdon Creek, Pine Creek, tributary Huntingdon Creek; yellow perch, South Pond, Sylvian Lake, Harvery Lake, Silkworth Lake, Grassy Pond, North Pond, Bryant Ice Dam, Harveys Creek, Mountain Spring Ice Co. Dam No. 1, Perrins Marsh or Browns Pond, Cummings Pond, White Haven Dam, tributary Lehigh River, Penna Lake on Wrights Creek, Ice Lake on Wrights Creek, Nuangola Lake or Triangular Lake, Sugar Notch Dam or Boyles Dam, Bereys Pond or Odlers Pond; rainbow trout, Lehigh River, tributary Delaware River; pike perch, N. Branch Susquehanna River, tributary Susquehanna River, Harveys Lake.

Lycoming County—yellow perch, Muncy Creek, tributary Susquehanna River, Little Muncy Creek, tributary Muncy Creek, Mill Creek, tributary Loyalsock Creek, Lycoming Creek, tributary Susquehanna River, Loyalsock Creek, tributary Susquehanna River; fingerling brook trout, Pleasant Stream, tributary Lycoming Creek, Slate Run, tributary Pine Creek, Cedar Run, tributary Pine Creek.

McKean County—fingerling brook trout, Skinner Creek, tributary, Allegheny River, Game Refuge 61, Mead Run, tributary Kinzua Creek, Allegheny National Forest, Watermill Run, tributary Kinzue Creek, Allegheny National Forest, Nigger Run, tributary Toby Creek, Allegheny National Forest, Two Mile Run, tributary Tionesta Creek, Allegheny National Forest, Colegrove Run, tributary Potato Creek, Lasher Run, tributary Potato Creek, Robins Run, tributary Potato Creek, Boyer Run, tributary Potato Creek, Hamilton Run, tributary Potato Creek; yellow perch, Mellander Pond, Mt. Jewett, Gifford Pond, Smethport; rainbow trout, Pennsylvania Pond.

Mercer County—fingerling brook trout, Greggs Run, tributary Wolf Creek, Mill Creek, tributary Little Neshannock Creek, Black Run, tributary Wolf Creek, Todds Run, tributary Wolf Creek, Cornelieus Run, tributary Wolf Creek; yellow perch, Little Shenango River, tributary Shanango River, Shenango River, tributary Beaver River, Furnace Pond, Neshannock Creek, tributary Shenango River, Shaws Dam on Wolf Creek, Montgomery Dam on Wolf Creek, Sandy Lake; pike perch, Neshannock Creek, tributary Shenango River.

Mifflin County—fingerling brook trout, Muthersbaughs Run, tributary Laurel Run, Laurel Run, tributary Kishacoquillas Creek, Treaster Valley Creek, tributary Honey Creek, Bear Sap Run, tributary Treaster Valley Creek, Spectacal Run, tributary Licking Creek, Spruce Run, tributary Licking Creek, East Licking Creek, tributary Juniata River, West Branch Kishacoquillas Creek, tributary Kishacoquillas Creek; pike perch, Juniata Country Club Dam, Juniata River, tributary Susquehanna River, Jacks Creek, tributary Susquehanna River; yellow perch, Juniata Country Club Dam on Juniata River, Jacks Creek, tributary Juniata River.

Monroe County—yellow perch, Mineola Lake, A. L. Rake Dam or Pond Creek, Arlington Lake, McDonough Ice Pond, Coleman Pond, Half Moon Pond, Youngs Pond or Twin Lake, Echo Lake in Coalbaugh Township, Mountain Ice. Co. Dam No. 1 on Headwaters Tobyhanna Creek; pike perch, Delaware River.

Montgomery County — fingerling brook trout, Duga Run, tributary Deep Creek, Deep Creek, tributary Perkiomen Creek; pike perch, Skippack Creek, tributary Perkiomen Creek, Towmencin Creek, tributary Skippack Creek, Northwest Branch Perkiomen Creek, tributary Perkiomen Creek, Macoby Creek, tributary Perkiomen Creek, Northeast Branch Perkiomen Creek, tributary Perkiomen Creek; yellow perch, Perkiomen Creek, tributary Schuylkill River.

Montour County—yellow perch, Chillisquaqua Creek, tributary North Branch Susquehanna River, Mahoning Creek, tributary North Branch Susquehanna River.

Northampton County — fingerling brook trout, Mortins Creek, tributary Delaware River, Saucon Creek tributary Lehigh River, Mud Run, tributary Bushkill Creek, Merwith Run tributary Bushkill Creek, Hokendauqua Creek, tributary Lehigh River, Indian Creek, tributary Lehigh River, Little Bushkill Creek, tributary Bushkill Creek, Ladners Run, tributary Waltz Creek, Green Waltz Creek, tributary Waltz Creek, Finkbinder Spring, tributary Waltz Creek, Davis Run, tributary Waltz Creek, Monocacy Creek, tributary Lehigh River; pike perch, Delaware River; yellow perch, Hellertown Reservoir Park Dams No. 1 and No. 2, Delaware River, Hokendauqua Creek, tributary Lehigh River, Bushkill Creek (Bowers Dam), Monocacy Creek (Paint Mill Dam).

Northumberland County — yellow perch, Warrior Run, tributary North Branch Susquehanna River, Mahantango Creek, tributary North Branch Susquehanna River, Chillisquaque Creek, tributary North Branch Susquehanna River.

Perry County—pike perch, Juniata River, tributary Susquehanna River, Buffalo Creek, tributary Juniata River, Susquehanna River; yellow perch, Shermans Creek, tributary Susquehanna River, Weaver Dam on Sherman Creek, tributary Susquehanna River, Buffalo Creek, tribu-

tary Juniata River, Little Buffalo Creek, tributary Juniata River, Juniata River, tributary Susquehanna River, Cocolamus Creek, tributary Juniata River, Susquehanna River; fingerling brook trout. Kells Run, tributary Raccoon Creek, Cherry Run, tributary Big Buffalo Creek, Crums Run, tributary Raccoon Creek, Beavers Run, tributary Cocolamus Creek, Lyons Run or Barrets Run, tributary Raccoon Creek, Rumberger Run, tributary Raccoon Creek.

Philadelphia County — rainbow trout, Wissahickon Creek, tributary Schuylkill River; brown trout, Wissahickon, tributary Schuylkill River.

Pike County—pike perch, Delaware River, Lake Wallenpaupack; pickerel, Lake Wallenpaupack; sunfish, Egypt Meadow Dam, Lake Wallenpaupack; fingerling brook trout, Spencer Run, tributary Adams Branch, Mill Branch, tributary Sawkill Creek, Sap Orchard Run, tributary Dunnicks Branch, Spring Run, tributary Blooming Creek, Birch Branch Brook, Rock Hill Branch, tributary Blue Heron Lake, Decker Run, tributary Kimbles Brook; yellow perch, Wallenpaupack Lake, Promise Land Pond, White Deer Lake, Westcolang Lake, Big Tink Pond or Teddyuscong Lake, Welcome Lake or Simms Pond, View Lake or Panther Lake, Big Twin Lake, Little Twin Lake, Kleinhan's Mill Pond, Bruce Lake or Roots Pond, Big Mud Pond or Minisink Lake, Little Mud Pond (Porter Township), Egypt Meadow Dam, Fairview Lake, Pecks Pond, Big Walker Lake, Greely Lake, Lower Shohola Falls Dam or Hillar Lake, Mud Pond in Dingles Township, Sawkill Pond, Taminent Lake or Second Pond, Forest Lake or First Pond.

Potter County — fingerling brook trout, Nine Mile Creek, tributary Cushing Creek, Susquehannock State Forest, Moores Run, tributary First Fork Sinnemahoning Creek, Susquehannock State Forest, Sunken Branch, tributary Pine Creek, Susquehannock State Forest, Prouty Creek, tributary First Fork Sinnemahoning Creek, Susquehannock State Forest, South Woods, tributary Sinnemahoning Creek, Mundy Brook, tributary Luddington Branch, Reynoldstown Brook, tributary Ellisburg Branch, Sherwood Hollow Run, tributary West Branch Genessee River, Clancy Brook, tributary Genessee River, Dog Town Branch, tributary Ellisburg Branch, Rose Lake Stream, tributary Ellisburg Branch, Nelson Run, tributary Mill Creek, Reese Hollow, tributary Gold Branch; yellow perch, Rose Lake.

Schuylkill County — fingerling brook trout, North and East Branch Wolf Creek, tributary Wolf Creek, Stoney Creek, tributary Large Wolf Creek Reservoir, Coal Run, tributary Coal Run Reservoir, West Branch Beaver Run, tributary Beaver Run,, West Branch Bear Creek, tributary Bear Creek, East Branch Bartleotts Creek, tributary East Branch Bear Creek, West Branch Bartleotts Creek, tributary East Branch Bear Creek, Owl Creek, tributary Schuylkill River, East Branch Tar Run, tributary Tar Run, Cold Run, tributary Schuylkill River, Heisers Run, tributary Locust Valley Creek, Stoney Run, tributary Locust Valley Creek, Ellis Run, tributary Locust Valley Creek, West Branch Tar Run, tributary Tar Run, Northeast Branch Wolf Creek, tributary Wolf Creek; yellow perch, Long Run, tributary Schuylkill River, Mahopango Creek, tributary Susquehanna River, Deep Creek, tributary Pine Creek, Sweet Arrow Lake, Old Schuylkill Canal, Hosensack Creek, tributary Pine Creek; pike perch, Lizard Creek, tributary Lehigh River.

Snyder County — yellow perch, Middle Creek, tributary Susquehanna River, Mahantango Creek, tributary Susquehanna River, Penns Creek, tributary Susquehanna River; fingerling brook trout, Mitchel Run, tributary Middle Creek, Riglers Run, tributary Middle Creek, Coon Hoven Run, tributary Middle Creek, Swift Run, tributary Middle Creek.

Somerset County—fingerling brook trout, Mangus Run, tributary Beaver Run, Godon Run, tributary Beaver Run, Berkevile Run, tributary Beaver Run, Arrow Run, tributary Roaring Forks Creek, Panther Run, tributary Dark Shade Creek, Roaring Fork Run, tributary Shade Creek, Left Branch Biscuit Spring Creek Run, tributary Shade Creek, Right Branch Biscuit Spring Run, tributary Spring Creek, Ripple Run, tributary Shade Creek, Cucumber Run, tributary Casselman River, Enos Run, tributary Whites Creek, Harbauge Run, tributary Big Sandy Creek, Draketown Run, tributary Youghiogheny River, Laurel Run, tributary Laurel Hill Creek, East Shaffer Run, tributary Wills Creek, Shaffer Run, tributary Laurel Hill Creek, Pletcher Run, tributary Laurel Hill Creek, Sandy Run, tributary Laurel Hill Creek, Lake Run, tributary Oven Run, Wagner Run, tributary Oven Run, Oven Run, tributary Stoney Creek, Headwaters of Raystown Branch, tributary Raystown Branch, Blue Lick Creek, tributary Casselman River, Brush Creek, tributary Wills Creek, Wear Run, tributary Brush Creek, Flaugherty Creek, tributary Casselman River, Miller Run, tributary Flaugherty Creek, Laurel Run, tributary Wills Creek, Wills Creek, tributary Potomac River, Cranberry Run, tributary Elk Lick Run, Spook Run, tributary Elk Lick Creek, Lepley Run, tributary Elk Lick Creek, Elk Lick Run, tributary Casselman River; yellow perch, Bigby Creek, tributary Casselman River, Elk Lick Creek, tributary Casselman River, McDonaldson Dam or Brothers Valley Coal Co. Dam, Rowena Lake, Middle Creek, tributary Casselman River, Kimberly Run, tributary Coxes Creek, W. Branch Coxes Creek, tributary Coxes Creek.

Sullivan County—yellow perch, Rouch Lake or Frant Lake or Lucia Lake, Mud Lake, Splash Dam, tributary Mehoopany Creek, Hunters Lake, Eagles Mere Lake, Elk Lake.

Susquehanna County—pike perch, North Branch Susquehanna River, tributary Susquehanna River; yellow perch, Carr Lake or Caid Pond, Lords Pond, Lakeside Pond, Schoolys Pond, Wrighters Lake, Lower Lake, Middle Lake, Upper Lake, Lake Edlewild or Long Pond, Hells Half Acre Lake, Big Elk Lake, Ely Lake or South Pond, East Lake, Heart Lake, Butler Lake, Quaker Lake, Pages Pond, Stearns Lake, Tuscarora Lake or Kinneys Pond, Beaver Pond, Tyler Lake, Tingley Lake, Forest Lake, Fox Pond, Comfort Pond, Lewis Lake, Cottrell Pond, Bixby Pond, Jones Lake or Montrose Lake.

Tioga County—fingerling brook trout, Steepenhouse Run, tributary Crooked Creek (State Game Refuge No. 37), Asaph Run, tributary Marsh Creek, Tioga State Forest District, Straight Run, tributary Marsh Creek, Tioga State Forest District, Belman Run, tributary Tioga River, South Creek, tributary Babs or Normans Creek, Sand Run, tributary Babs or Normans Creek, Babs or Normans Creek, tributary Pine Creek, Dykes Run, tributary Sand Creek, Hill Creek, tributary Crooked Creek, Collier Run, tributary Hill Creek, Hamm Run, tributary Hill Creek, Copley Run, tributary Hill Creek, Norris Brook, tributary Cathie Hollow Creek, Lamos Creek, tributary Tioga River, Painter Run, tributary Mill Creek, West Branch Baileys Run, tributary Mill Creek; yellow perch, Crooked Creek, tributary Tioga River, Marsh Creek, tributary Pine Creek, Planks or Blanks Pond; fingerling brown trout, Cedar Run, tributary Pine Creek.

Union County — yellow perch, Penns Creek, P. P. L. Co., tributary Susquehanna River, Buffalo Creek, tributary West Branch Susquehanna River, Little Buffalo Creek, tributary Buffalo Creek, White Deer Hole Creek, tributary West Branch Susquehanna River.

Venango County—fingerling brook trout, Nicholson Run or Morrison Run, tributary Big Sandy Creek; brook trout, Porkey Creek, tributary Hemlock Creek, Hemlock Creek, tributary Allegheny River; yellow perch, French Creek, tributary Allegheny River, Sandy Creek, tributary Allegheny River, Allegheny River, tributary Ohio River; pike perch, Allegheny River, tributary Ohio River; brown trout, Pithole Creek, tributary Allegheny River.

Warren County—fingerling brook trout, Queen Creek, tributary East Hickory Creek, Allegheny National Forest, Piney Run, tributary Queen Creek, Allegheny National Forest; brook trout, Queen Creek, tributary East Hickory Creek, Allegheny National Forest; yellow perch, Conewango Creek, tributary Allegheny River, Brokenstraw Creek, tributary Allegheny River, Columbus Dam, Allegheny River, Allegheny River, tributary Ohio River; pike perch, Brokenstraw Creek, tributary Allegheny River, Conewango Creek, tributary Allegheny River, Allegheny River, tributary Ohio River.

Washington County—yellow perch, Fifty-Three Reservoir at Cokeburg, Little Chartiers Creek, or Linden Creek, tributary Chartiers Creek, Ten Mile Creek, tributary Monongahela River, Cross Creek, tributary Ohio River, Buffalo Creek, tributary Ohio River, Langhloth Mill Dam, Aunt Clara Ford Creek or Middle King Creek, tributary King Creek, Kings Creek, tributary Ohio River.

Wayne County—yellow perch, Long Pond (Lake and Paupack Township), Goose Pond, Lake Henry or Maplewood Lake, Seeleyville Pond, Duck Harbor Pond, Rose Pond, Coxton Lake, Island Lake, Shehawken Lake, Clines Pond, Adams Lake, Sly Lake, Long Pond (Preston Township), Bigelow Lake, Lake Ladore, Keens Pond, Elk Lake, Miller Pond, Starlight Lake, Independent Lake, Bone Lake, Long Pond, (Mt. Pleasant and Clinton Township), Lake Como, North Jersey Lake, Gouldsboro Ice Pond or Watawgo Lake, Spruce Lake, Cadjaw Pond, Bunnells Pond, White Oak Pond, Upper Twin Lake, Lower Twin Lake, Four

Mile Pond; fingerling brook trout, Hollester Creek, tributary Middle Creek, Winding Hill Creek, tributary Middle Hill Creek, Mosshollow Creek, tributary West Branch Wallenpaupack Creek, Five Mile Creek, tributary Lake Wallenpaupack, Peet Creek, tributary Five Mile Creek, Indian Orchard Brook, tributary Lackawaxen Creek, Brinks Brook, tributary Lackawaxen Creek, Root Brook, tributary Lackawaxen Creek, Little Mast Hope Brook, tributary Mast Hope Brook, Johnson Creek, tributary Lackawaxen Creek, Kennedy Creek, tributary Johnson Creek, McCusker Creek, tributary Johnson Creek, Douglas Creek, tributary East Branch Dyberry Creek, Bigelow Creek, tributary Bigelow Lake, Rogan Creek, tributary Johnson Creek, Brooking Creek, tributary Johnson Creek, Whites Creek, tributary Johnson Creek, Zologa Creek, tributary Johnson Creek, Rock Lake Creek, tributary Big Dyberry Creek, McAvoy Creek, tributary Big Dyberry Creek, Warwick's Lake, tributary Big Dyberry Creek, Cramer Creek, tributary Dyberry Creek, Lackawaxen Creek, tributary Delaware River, Moase Creek, tributary Lackawaxen River; pike perch, Lake Wallenpaupack.

Westmoreland County—fingerling brook trout, Indian Creek, tributary Youghiogheny River, Roaring Run, tributary Indian Creek, Pike Run, tributary Indian Creek, Furnace Run, tributary Loyalhanna Creek, Spruce Run, tributary Quemahoning Creek, Idlewild Run, tributary Loyalhanna Creek, South Fork of Mill Creek, tributary Mill Creek, Camp Creek, tributary Indian Creek; yellow perch, Bagley Reservoir, Beatty Reservoir, St. Vincents Lake, Carpentertown Dam No. 1, Carpentertown Dam No. 2, Mammoth Dam.

Wyoming County—yellow perch, Chamberlin Pond, Nigger Pond, Carey Lake, Mud Pond, Edinger Pond or McClure Pond; fingerling brook trout, Cider Run, tributary Bowman's Creek, Baker Run, tributary Bowman's Creek, Beaver Run, tributary Bowman's Creek, Stone Run, tributary Bowman's Creek, Eurick Run, tributary Bowman's Creek, Becker Brook, tributary Mehoopany Creek, Stony Brook, tributary Mehoopany Creek, Dark Hollow Creek, tributary Susquehanna River, Sugar Hollow Creek, tributary Bowman's Creek, Ox Box Creek, tributary Tunkhannock Creek, Kasson Brook, tributary Mehoopany Creek, Henry Lott Run, tributary Mehoopany Creek, Summers Brook, tributary Mehoopany Creek, Branch Summers Brook, tributary Summers Brook, Cider Run, tributary Mehoopany Creek; pike perch, North Branch Susquehanna River, tributary Susquehanna River.

York County—fingerling brook trout, Gobrecht's Run, tributary Little Conewango Creek, South Branch Codorus Creek, tributary Codorus Creek, Gnattown Run, tributary Oil Creek, Grost Creek, tributary Conewango Creek, Rohrbaugh Run, tributary Oil Creek, Furnace Run, tributary Susquehanna River, Trout Run, tributary East Branch Codorus Creek, West Branch Codorus Creek, tributary Codorus Creek, Indian Springs Run, tributary Kroutz Creek, Green Branch Creek, tributary Susquehanna River, Dee Run, tributary Codorus Creek; rainbow trout, Haldeman Pond; pike perch, Susquehanna River; yellow perch, North Branch Bermudian Creek, Little Conewango Creek, tributary Conewango Creek, West Branch Codorus Creek, Wrightsville Quarry Hole, Conewango Creek, tributary Susquehanna River.

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Beaver County—rainbow trout, Bradys Run, tributary Beaver River.

Bedford County—rainbow trout, Thomas W. Koon Lake; brown trout, Yellow Creek, tributary Raystown Branch Juniata River, Wills Creek, tributary Potomac River; brook trout, Three Springs Creek, tributary Yellow Creek; fingerling brook trout, Maple Run, tributary Yellow Creek, Otts Run, tributary Yellow Creek, Pipers Run, tributary Raystown Branch Juniata River, Shoupe Run, tributary Little Willis Creek, Cove Run, tributary Little Willis Creek, Grim Run, tributary Little Wills Creek, Hyndman Reservoir, tributary Wills Creek, Tumey's Run or Trout Run, tributary Wills Creek, Tar Water Run, tributary Little Wills Creek, Tiger Valley Run, tributary Wills Creek, Gladdens Run, tributary Wills Creek.

Blair County—brown trout, Piney Creek, tributary Frankstown Branch Juniata River; brook trout, Bobs Creek, tributary Dunnings Creek, Van Scoyoc Creek, tributary Bald Eagle Creek, Bells Gap Run, tributary Little Juniata River, Canoe Creek, tributary Frankstown Branch Juniata River; fingerling brook trout, Van Scoyoc Creek, tributary Bald Eagle Creek, Little Laurel Run, tributary Van Scoyoc Creek, Sink Run, tributary Bald Eagle Creek, Millers Run, tributary Big Fill Creek, Logan Run, tributary Little Juniata River.

Bradford County—fingerling brook trout, Daggett Creek, tributary Seeley Creek, West Branch, tributary Baileys Creek, Roy Run, tributary Seeley Creek, Can Trout Run, tributary Daggett Creek, Danning Run, tributary Tioga River, Mill Creek, tributary Towanda Creek, Mace Creek, tributary Lycoming Creek, Watkins Run, tributary Lycoming Creek, Taber Run, tributary Lycoming Creek, Rolison Run, tributary Schraders Creek, State Refuge Land No. 12, Coon Creek, tributary Tioga River, in Bradford County Land Readjustment Project.

Bucks County—brown trout, Pine Run, tributary North Branch Neshaminy Creek.

Butler County—fingerling brook trout, Little Scrubgrass Creek, tributary Allegheny River, Hillard Run, tributary North Branch Slippery Rock Creek, Christy Run, tributary North Branch Slippery Rock Creek, Shira Run, tributary North Branch Slippery Rock Creek; rainbow trout, Thorn Creek, tributary Conoquenessing Creek.

Cambria County—brook trout, Hinckstown Run, tributary Conemaugh River.

Cameron County—brown trout, Sinnemahoning Portage Creek, tributary Driftwood Branch, Driftwood Branch, tributary Sinnemahoning Creek.

Carbon County—brook trout, Buckwa Creek, tributary Aquashicola Creek, Drake Creek, tributary Lehigh River; rainbow trout, Buckwa Creek, tributary Aquashicola Creek, Pohopoco Creek, tributary Lehigh River, Wild Creek, tributary Pohopoco Creek; fingerling brook trout, James Run, tributary Lehigh River, Quakake Creek, tributary Black Creek.

Centre County—brook trout, South Fork Beech Creek, tributary Beech Creek; rainbow trout, Spring Creek, tributary Bald Eagle Creek, Little Moshannon or Black Moshannon Creek, tributary Moshannon Creek, Penns Creek, tributary Susquehanna River; brown trout, Spring Creek, tributary Bald Eagle Creek; suckers, Moshannon Lake; fingerling brook trout, Trout Run, tributary Big Moshannon Creek, Moshannon State Forest, Macky Run, tributary Cedar Run, Cedar Run, tributary Spring Creek, Jacksonville Run, tributary Bald Eagle Creek, Hawk Creek, tributary Marsh Creek.

Chester County—rainbow trout, East Branch Octorora Creek, tributary Octorora Creek; brook trout, Doe Run, tributary West Branch Brandywine Creek, French Creek, tributary Schuylkill River, Birch Run, tributary Bucks Run; brown trout, White Clay Creek, tributary Christiana Creek, Officers Run, tributary East Branch Octorora Creek.

Clearfield County—brown trout, Little Clearfield Creek, tributary Clearfield Creek; fingerling brook trout, North Fork Wilson Run, tributary Bennetts Branch, Moshannon State Forest, West Fork Wilson Run, tributary Bennetts Branch, Moshannon State Forest, North Wilmer Creek, tributary Clearfield Creek, South Wilmer Creek, tributary North Wilmer Creek, Hockenberry Run, tributary North Wilmer Creek, Big Deer Creek, tributary Susquehanna River, Little Deer Creek, tributary Big Deer Creek.

Clinton County—rainbow trout, Fishing Creek, tributary Bald Eagle Creek; brown trout, West Branch Young Woman's Creek, tributary Young Woman's Creek, Right Branch, Young Woman's Creek, tributary Young Woman's Creek, Lick Creek, tributary West Branch Susquehanna River, Young Woman's Creek, tributary West Branch Susquehanna River; fingerling brook trout, Trout Run, tributary Kettle Creek, Susquehannock State Forest, Sandy Run, tributary Drury Run, Sproul State Forest, Benjamine Run, tributary Baker Run, Sproul State Forest, Left Branch Young Woman's Creek, tributary Young Woman's Creek, Sproul State Forest, Chathams Run, tributary Susquehanna River, Sproul State Forest, Lick Run, tributary Susquehanna River, Sproul State Forest, Grugan Run, tributary Susquehanna River, Sproul State Forest, Rattlesnake Run, tributary Susquehanna River, Sproul State Forest, Spring Lick, tributary Scoatoc Creek, Drury Run, tributary Susquehanna River, Shintown Run, tributary Susquehanna River, Hollands Run, tributary Susquehanna River, Long Run, tributary Fishing Creek, Plum Run, tributary Fishing Creek, Cedar Run, tributary Fishing Creek, Cherry Run, tributary Fishing Creek.

Columbia County—brown trout, Fishing Creek, tributary North Branch Susquehanna River.

Crawford County—muscallonge, Conneaut Lake.

Cumberland County—rainbow trout, Big Springs, tributary Conodoguinet Creek, Yellow Breeches Creek, tributary Susquehanna River; brown trout, Yellow Breeches Creek, tributary Susquehanna River; brook trout, Bird Run or Whiskey Run or Cato Run, tributary Conodoguinet Creek.

Dauphin County—rainbow trout, Clarks Creek, tributary Susquehanna River.

Delaware County—brown trout, Ridley Creek, tributary Delaware River.

Elk County—brook trout, East Branch Hicks Run, tributary Hicks Run; rainbow trout, East Branch Clarion River, tributary Clarion River; fingerling brook trout, Coward Run, tributary Toby Run—State Game Land No. 44, East Branch Kersey Run, tributary Bennetts Branch, West Branch Kersey Run, tributary Bennetts Branch.

Fayette County—rainbow trout, big Meadow Run, tributary Youghiogheny River; brown trout, Little Sandy Creek, tributary Big Sandy Creek, Big Sandy Creek, tributary Cheat River, Dunbar Creek, tributary Youghiogheny River; brook trout, Beaver Run, tributary Big Meadow Run, Laurel Run, tributary Big Meadow Run, Buck Run, tributary Indian Creek; fingerling brown trout, Dunbar Creek, tributary Youghiogheny River, Little Dunbar Creek, tributary Dunbar Creek, Tuckers Run, tributary Dunbar Creek, Limestone Run, tributary Dunbar Creek.

Franklin County—rainbow trout, East Branch Little Antietam Creek, tributary Little Antietam Creek; brown trout, West Branch Conococheague Creek, tributary Conococheague Creek.

Huntingdon County—rainbow trout, Shover Creek, tributary Juniata River; brown trout, Blacklog Creek, tributary Aughwick Creek.

Indiana County—fingerling brook trout, Cops Run, tributary Big Yellow Creek, Laurel Run, tributary Big Yellow Creek, Gilhouse Run, tributary Little Yellow Creek, McLain Run, tributary Ramsey Run, Marshall Run, tributary Twolick, Tomb Run, tributary Conemaugh River, Strait Run, tributary Scessna Run, Enterprise Run, tributary Little Mahoning Creek, Brewer Run, tributary Little Mahoning Creek.

Juniata County—brook trout, Horse Valley Run, tributary Tuscarora Creek.

Lawrence County—rainbow trout, Little Neshannock Creek, tributary Neshannock Creek; fingerling brook trout, McCracken Run, tributary Slippery Rock Creek.

Luzerne County—brown trout, Lehigh River, tributary Delaware River, Huntington Creek, tributary Fishing Creek.

Lycoming County—brown trout, Loyalsock Creek, tributary West Branch Susquehanna River, Larrys Creek, tributary West Branch Susquehanna River, Muncy Creek, tributary West Branch Susquehanna River, Slate Creek, tributary Pine Creek, Lycoming Creek, tributary West Branch Susquehanna River; fingerling brook trout, Sand Spring Run, tributary Little Bear Creek, Fisher Hollow Creek, tributary Lycoming Creek, Plunketts Run, tributary Loyalsock Creek, Wolf Run, Trout Run, tributary Pine Creek, Salt Run, tributary Wallace Run, Bucks Run, tributary Pine Creek, Hogan Run, tributary Lycoming Creek, Mill Run, tributary Loyalsock Creek, Long Run, tributary Gray Run, Panther Run, tributary Little Bear Creek, Block Creek, tributary Little Pine Creek, Slack Run, tributary Loyalsock Creek, Stony Gap Run, tributary Hogan Run, Texas Creek, tributary Little Pine Creek, Fourth Gap, tributary South Creek, Ramsey Run, tributary Pine Creek, Deer Run, tributary Lycoming Creek, Bar Bottom, tributary Wallace Creek, Doe Run, tributary Rock Run, Murrays Run, tributary Wallace Creek, Packhorse, tributary Block House, Nesbit Run, tributary Susquehanna River, Moon Run, tributary South Creek, Wallace Run, tributary Loyalsock Creek, Larrys Creek, tributary Susquehanna River, Trout Run, tributary Lycoming Creek, Block House, tributary Little Pine Creek, Upper Trout Run, tributary Pine Creek, Mash Run, tributary Lycoming Creek, Trout Pond Run, tributary Big Muncy Creek, Heller Run, tributary Big Muncy Creek, Little Muncy, tributary Big Muncy Creek, Outlet Run, tributary Big Muncy Creek, Mackie Run, tributary Big Muncy Creek, Peterman Run, tributary Big Muncy Creek, Public Run, tributary Big Muncy Creek, Big Muncy Creek, tributary Susquehanna River, Roaring Run, tributary Larrys Creek, Tiadoughton State Forest, McMurrin, tributary Lycoming Creek, Tiadoughton State Forest, Sweitzer Run, tributary Lycoming Creek, Tiadoughton State Forest, English Run, tributary Little Pine Creek, Tiadoughton State Forest, Dam Run, tributary Little Pine Creek, Tiadoughton State Forest, Upper Pine Bottom, tributary Pine Creek, Tiadoughton State Forest, Browns Run, tributary Pine Creek, Tiadoughton State Forest, Trout Run, tributary Pine Creek, Tiadoughton State Forest.

McKean County—fingerling brook trout, Mead Run, tributary Kinzua Creek; brown trout, Potato Creek, tributary Allegheny River; rainbow trout, Portage Creek, tributary Allegheny River.

Mifflin County—rainbow trout, Kishacoquillas Creek or West Branch Kishacoquillas Creek, tributary Juniata River; brown trout, East Branch Kishacoquillas Creek or Honey or New Lancaster Creek, tributary Kishacoquillas Creek; fingerling brook trout, Lingle Valley Stream, tributary Laurel Run, Little Mountain Stream, tributary Lingle Valley Stream.

Monroe County—rainbow trout, Buckhill Creek, tributary East Branch Broadheads Creek, Snow Hill Dam, Broadheads Creek, tributary Delaware River; brown trout, Paradise Creek, tributary Broadheads Creek, Broadheads Creek, tributary Delaware River, Pohopoco Creek, tributary Lehigh River.

Northampton County—rainbow trout, Bushkill Creek, tributary Delaware River; brown trout, bushkill Creek, tributary Delaware River, Hokendauqua Creek, tributary Lehigh River.

Perry County—brook trout, Laurel Run, tributary Shermans Creek.

Philadelphia County—rainbow trout, Wissahickon Creek, tributary Schuylkill River; brown trout, Wissahickon Creek, tributary Schuylkill River.

Potter County—brown trout, Pine Creek, tributary West Branch Susquehanna River, Kettle Creek, tributary West Branch Susquehanna River.

Schuylkill County—brook trout, Little Catawissa Creek, tributary Catawissa Creek.

Somerset County—rainbow trout, Laurel Hill Creek, tributary Casselman River, Kooser Lake; brown trout, Laurel Hill Creek, tributary Casselman River, Flaugherty Creek, tributary Casselman River, Piney Run, tributary Clear Shade Creek, Whites Creek, tributary Casselman River.

Sullivan County—fingerling brook trout, Fishing Creek, tributary Muncy Creek—State Game Land No. 13, Muncy Creek, tributary Susquehanna River—State Game Land No. 13, Dry Run, tributary Loyalsock Creek, Wyoming State Forest District, Rock Run, tributary Little Loyalsock Creek, Wyoming State Forest District, Shanerburg Creek, tributary Loyalsock Creek, Wyoming State Forest District, Mill Creek, tributary Loyalsock Creek, Wyoming State Forest District, Polebridge Creek, tributary Loyalsock Creek, Wyoming State Forest District, Kettle Creek, tributary Loyalsock Creek, Wyoming State Forest District, Danble Creek, tributary Loyalsock Creek, Wyoming State Forest District, Elk Creek, tributary Loyalsock Creek, Lick Creek, tributary Loyalsock Creek, Little Mill Creek, tributary Loyalsock Creek, Eagles Mere Outlet, tributary Muncy Creek, Hoagland Branch, tributary Loyalsock Creek.

Susquehanna County—rainbow trout, Starrucca Creek, tributary North Branch Susquehanna River.

Tioga County—fingerling brook trout, Velmans Run, tributary Tioga River, Taylor Run, tributary Tioga River, Carpenter Run, tributary Tioga River; rainbow trout, Pine Creek, tributary West Branch Susquehanna River; brown trout, Tioga River, tributary Chemung River, Pine Creek, tributary West Branch Susquehanna River.

Union County—fingerling brook trout, Furnace Gap Run, tributary Penns Creek—Bald Eagle State Forest District, Henstep Run, tributary Penns Creek—Bald Eagle State Forest District, Stitzer Run, tributary Rapid Run, East Branch Creamery Run, tributary Buffalo Creek, Brungard Run, tributary Buffalo Creek, Coral Run, tributary Penns Creek, West Branch Creamery Run, tributary Buffalo Creek, Kelly Run, tributary Buffalo Creek, Beaver Run, tributary Buffalo Creek, Little Buffalo Creek, tributary Buffalo Creek; brook trout, Rapid Run, tributary Buffalo Creek, Sand Spring Run, tributary White Deer Creek; rainbow trout, Half-way Dam or Fourteen Mile Narrows Dam; brown trout, Penns Creek, tributary Susquehanna River, White Deer Creek, tributary West Branch Susquehanna River.

Warren County—fingerling brook trout, Hermit Branch Farnsworth Creek—State Game Land No. 29, Hook Branch, tributary Browns Run, Allegheny National Forest District, Fluent Branch, tributary Browns Run, Allegheny National Forest District, Main Branch, tributary Browns Run, Allegheny National Forest District, Criswell Branch, tributary Farnsworth Creek, Allegheny National Forest District, Middle Branch, tributary Minister Creek, Allegheny National Forest District, Middle Branch, tributary Four Mile Creek, Allegheny National Forest District, Beauman Run, tributary Four Mile Creek, Allegheny National Forest District, Thomas Run, tributary Four Mile Creek, Allegheny National Forest District, Mauris Run, tributary Allegheny River, Allegheny National Forest District, Hedge Hog, tributary Allegheny River, Allegheny National Forest District, Charlie Run, tributary Allegheny River, Allegheny National Forest District, Len-

hart Run, tributary Allegheny River, Allegheny National Forest District, State Line Run, tributary Allegheny River, Hodge Run, tributary Allegheny River, Cornplanter Run, tributary Allegheny River, McGuire Run, tributary Allegheny River, Magee Run, tributary Allegheny River, Arcade Run, tributary Tidioute Creek, Hutchison Run, tributary Tidioute Creek, Reynolds Run, tributary Akely Run, Jones Run, tributary Akely Run, Van Arsdale Run, tributary Akely Run, Four Mile, tributary Tionesta Creek, Toms Run, tributary Spring Creek, Miles Run, tributary Brokenstraw Creek, Matteson Run, tributary Brokenstraw Creek, Prosser Run, tributary Coffee Creek, Matthews Run, tributary Brokenstraw Creek, Mead Run, tributary Brokenstraw Creek, Hosmer Run, tributary Crouse Run, Spring Run, tributary, Brokenstraw Creek, Stony Run, tributary Brokenstraw Creek, Dearmans Run, tributary Brokenstraw Creek, Dunns Run, tributary Allegheny River.

Wayne County—fingerling brook trout, Lackawaxen Creek, Waymart Branch, tributary Lackawaxen Creek.

Westmoreland County — brown trout, Linns Run, tributary Loyalhanna Creek, Jacobs Run, tributary Youghiogheny River.

Wyoming County — rainbow trout Bowmans Creek, tributary North Branch Susquehanna River; fingerling brook trout, Kehoe Run, tributary Riley Branch Meshoppen Creek, Lott Run, tributary Riley Branch Meshoppen Creek, Carlin Run, tributary White Branch Meshoppen Creek, Jennings Branch, tributary Voze Branch, Meshoppen Creek.

York County — rainbow trout, Furnace Run or Belle Hollow Run, tributary Sawmill Run.

BIG SUCKER CATCH

We haven't been hearing much about sucker fishing since trout, bass and other game fish moved into the limelight this year, so that there's a real refreshing element to this report on sucker fishing activities from Charley Long, Warden at East Waterford.

H. W. Secrist of Mount Union is right on the verge of claiming the sucker fishing championship of the state this year. His catch consisted of 53 suckers. Four of the 53 were each 23 inches in length and weighed 4½ pounds.

MONTGOMERY SPORTSMEN START CLEAN-UP DRIVE

Determined to break up the practice of using stream banks as dumping grounds, the Montgomery County Fish, Game and Forestry Association and the Montgomery County Federation of Sportsmen, have taken a most commendable step in the right direction.

Recently it was announced that one of the first objectives of the active Montgomery County sportsmen will be beautifying of many of the picturesque watercourses in the county, including Perkiomen Creek, a popular bass stream, by removal of unsightly dumping grounds.

In the words of S. L. Horst of Schwenksville: "Eventually this noxious dumping of refuse along the banks of the Perkiomen and other streams will kill fish. But more serious and of more general concern, it will be a means of halting the visitation of thousands of city folks each year who come into our valley chiefly to enjoy the beauty and the advantage of our streams.

Young Carp Seined from Pymatuning Reservoir

"In brief, it will be the cause of the loss of thousands of dollars annually to our citizens."

J. Warren Ziegler, secretary of the county federation. believes much can be accomplished by proper education of the residents.

"Once the residents and officials of our county realize that the disintegration of our streams will directly affect their income and prosperity, I believe it will be a simple matter to stop this flagrant dumping of tin cans, garbage, glass and every other conceivable kind of refuse into the creeks.

"If there isn't any law on the statute books now, I am going to recommend to

the legislative committee that we attempt to have one passed which would compel every township and borough to provide a public dumping ground," Mr. Ziegler added. "I believe the failure of towns and townships to provide such places is responsible for much of the unwarranted condition today."

TULPEHOCKEN GOOD

Word comes from Warden W. E. Wounderly of Reading that the Tulpehocken Creek in Berks County is furnishing some first-rate smallmouth bass fishing this year. Fishing between Van Reed's and the Red Bridge on this stream, Stanley Hartman of Shillington has taken quite a few bass ranging in length to 16 inches.

JUNIATA VALLEY BASS

Some mighty fine smallmouth bass were taken late in July from the Juniata River and its tributaries, according to Warden Charley Long, East Waterford. Jim Hill of Johnstown scored with a 17½-inch smallmouth bass, taken on fly and spinner in Tuscarora Creek. Guy Kauffman of Mattawanna caught a 19½-inch smallmouth in the Juniata River near Ryde. It weighed 4 pounds. Bill Harshberger of Ryde, fishing plug, landed a wall-eyed pike in the Juniata at Ryde that measured 26 inches in length and weighed 4½ pounds.

Catches of other popular species of fish in this section were good this year, according to Long. Jack Parsons of Port Royal recently caught three bullhead catfish at the mouth of Tuscarora Creek, right where it merges with the Juniata. Two of the catties measured 19 inches in length and the other 17 inches, real bullheads, if you're asking us.

PIONEER ASSOCIATION BOOSTS FISH AND GAME

Word comes from Harvey D. Neff, secretary of the Pioneer Fish and Game Protective Association of Allentown, that this association last year played an important part in conservation activities of the Lehigh Valley. He writes:

"After many conversations between a more or less dissatisfied group of sportsmen, concerning their failure to be more fully acquainted with both the Fish and Game Commissions and their enormous task of propagating fish and game, the question was asked: Would it be profitable to organize a sportsmen's club? After giving the question considerable consideration, the Pioneer Social Hall was secured and a meeting was scheduled to be held on January 31, 1935.

"To the surprise of all interested, a representation of approximately 100 interested sportsmen were present when the meeting was called to order. This was the beginning of what is now known as the Pioneer Fish and Game Protective Association. Interesting subjects were discussed and a membership of 32 sportsmen were enrolled. Among the various speakers present was a representative from the Federation of Sportsmen's Clubs of Lehigh County. In speaking of organization, he explained the advantages of being a group of organized sportsmen, in comparison to that of just a group of individual sportsmen, stressing the point that every sportsman displaying either a hunting or a fishing license should belong to some sportsmen's association.

Catch of Brook Trout from Horse Valley Creek, Perry County. The Trout 7 to 12½ inches were caught by Harold O'Dell, East Waterford.

"The following temporary officers were appointed; president, August Steitz; vice-president, Harry Paff; recording secretary, Harvey Neff; financial secretary, Robert Ackerman; treasurer, Harry Stoneback. The president, August Steitz, desirous of promoting the interest shown at this meeting, announced that another meeting was to be held February 21, 1935, and every third Thursday of each month thereafter.

"News regarding the organization of a new sportsmen's club traveled fast, and by the end of the third meeting, or the March meeting, a total of 125 members had been enrolled. Membership remained on the increase. The interest and the response shown by the members in the various tasks put before them, resulted in the arranging of extensive programs. Realizing the large number of sportsmen not belonging to any sportsmen's clubs, and more or less disappointed in the small number of members enrolled, a membership drive was put under way. A fishing contest was conducted. A card party and drawing was held, the proceeds of the event to be expended for the purpose of purchasing game for restocking purposes.

"The lack of knowledge in club work, and the necessity of becoming more fully acquainted with both the Fish and Game Commissions, resulted in having with us on different occasions throughout the year, representatives from both the Fish and Game Commissions.

"Every possible assistance was given to both the District Fish Warden C. Joel Young and Game Protector Harry Rickert in the distribution and the restocking of both fish and game. The outstanding performance of any individual club member was performed by the Chairman of the Fish Committee when on January 23, 1936, he assisted District Fish Warden C. Joel Young in the restocking of a shipment of minnows consigned to the Little Lehigh in a temperature 10 degrees below zero.

"Due to the extreme cold weather and the heavy snows that have covered the ground to such an extent that it seems almost impossible for wild life to exist, a very extensive winter feeding program has been under way. Shelters have been built and feeding stations have been established, various club members being out every day feeding the friends of a sportsman and other outdoor lovers.

"We, the officers and members of the Pioneer Fish and Game Protective Association, feel proud of the record established in our first year of existence.

"Following is a summarization of the activities and the achievements accomplished in the first year of existence:

(a) The organizing of the Pioneer Fish and Game Protective Association.

(b) The securing of a Charter dated April 8, 1935.

(c) The admittance of junior members between the ages of 12 and 16 years of age.

(d) Member of Federation of Sportsmen's Clubs in Lehigh County.

(c) The admittance of the fairer sex into the fold.

(f) The receiving of the following game for distribution in the territory allotted to the club, in accordance with the Federation restocking program, 40 quail, 63 pheasants and 133 rabbits. Also various members assisted Game Protector Harry Rickert in stocking 380 quail and 396 rabbits.

(g) The purchase of three crates or 36 rabbits.

(h) The purchase of food for winter feeding, to the excess of $10.00.

(i) The restocking of Jordan Creek with 280 cans of brown trout or approximately 2,800 trout, 60 cans of minnows, 60 cans of yellow perch, 60 cans of sunfish and catfish combined and 40 cans of suckers. The first time in about ten years that suckers were planted in the Jordan Creek.

(j) Reaching a membership of approximately 300 sportsmen.

HERE AND THERE IN ANGLERDOM

Early in the trout season, Gerald Adams of Hawley caught a brown trout in Lake Wallenpaupack that measured 23 inches in length and weighed over three pounds.

While fishing in the West Branch of the Perkiomen Creek, Frank Keim, youthful Boyertown angler, caught a 14-inch brown trout. The fish was entered in the fishing contest being staged this year by the Boyertown Rod and Gun Club. A 12½-inch brownie was caught by Howard Fegley of Boyertown.

Good sportsmanship and law observance characterized early season fishermen on Fishing Creek, popular Columbia county stream, according to Special Warden Nick Ratamess of Berwick. Ratamess reports that he examined many catches and found few fishermen who did not have at least four or five trout in their creels.

An opening day catch of trout weighing, dressed, 6½ pounds, was made by Milton Thomas of Hickox, Potter county. The largest fish in the creel was a brown trout measuring 19 inches in length and weighing three pounds.

Reports of some of those big smallmouth bass taken from the Susquehanna River last season in the vicinity of Harrisburg are still filtering in. Using a chub for bait, George Mahaffey of Harrisburg, landed a smallmouth measuring 23 inches in length and weighing 5 pounds 2 ounces. It was taken below the Rockville bridge.

Spring Creek, Warren county, produced a fine catch of trout for Glenn Donaldson of Spring Creek, according to Warden R. C. Bailey. Glenn caught a 20-inch brown trout while using a nightcrawler and then, switching to flies, added six brook trout from 10 to 12 inches to his catch.

From Warden George Cross of Hammersley Fork comes a report that CCC camps in northern counties are planning intensive stream improvement work on trout streams in that territory. Farrandsville camp plans to put in 240 man days of improvement work on Lick Run, Clinton county. Two Mile Run camp will put in 120 man days in improving Shintown Run, and Hyner camp plans to put in 660 man days on Hyner Run, Rattlesnake Run and Lick Run. State camp will put in 370 man days in improving Bakers Run. According to Cross, Bald Eagle Creek is producing the best bass fishing this year that it has furnished in the past few years.

Joseph Madrak, 12, of Duryea, caught this 19½ inch, 4-pound Smallmouth Bass in the North Branch.

The McKee family of Clearfield cashed in heavily on trout catches this year, following many nights of work last winter in making flies, according to J. F. Livingston of the Oldtown Sportsmen's Association. Ralph McKee caught a 19-inch rainbow trout, Mrs. McKee a 16-inch rainbow and a 14-inch brown trout, and each of the McKee girls had two trout ranging in size around 14 inches. They made the catch on the home tied flies in Spring Creek, Centre county.

The Conodoguinet Creek in Cumberland County recently yielded a smallmouth bass measuring 19 inches in length to Ken Bashore of Shippensburg. Four other bass from 10 to 12 inches in length completed his catch.

The Federated Sportsmen of Lancaster County, Dick Sullenberger reports, are continuing their effective drive for better trout fishing through stream improvement. Recently it was announced that through an extensive Works Progress Administration Project, twelve miles of trout waters in the county will be improved. Work is now under way. Employment will be given to 86 men for a period of 10 months, the county paying $1,570.25 for equipment and the government providing $54,746.02 for labor.

An extremely heavy largemouth bass, 20 inches in length and tipping the scales at 5 pounds 2 ounces was taken last month in Latrobe Reservoir by James Bougher, high school student. of Latrobe. The big bass hit a plug, home-made, and required 20 minutes of hard fighting before it was landed. Another 20-inch largemouth was caught at the reservoir by Glenn Blansett of Latrobe.

Two big brown trout were taken shortly before close of the trout season by Wayne Lindsay of Cooks Corners in Clarion County. The brownies measured 24 inches and 18 inches respectively, the largest tipping the scales at 5 pounds. They were caught in Cathers Run.

While fishing fly and spinner in the Susquehanna River near Harrisburg, H. E. Miller of Harrisburg caught an exceptionally heavy largemouth bass, considering its length of 17 inches. It weighed 4 pounds.

Fishing for trout in the Black Moshannon on June 6, A. G. Shimmel of West Decatur caught five speckled beauties, four browns and one rainbow, from 9 to 12 inches in length, according to Warden Dave Dahlgren of Philipsburg, Centre County. Elk Creek in Centre County provided fine trouting on June 13 for Walter Diamond, Pat Diamond and George Diamond, all of Twin Rocks. Walter caught 13 brown trout, Pat two brookies and 9 browns and George one brownie, 18 inches in length. Jim Sandeen of Grassflat, 12 years old, scored with seven rainbow trout on the Black Moshannon on June 29. Joe Kephart of Philipsburg celebrated opening of the pickerel season on Moshannon dam in Centre County by landing a fine 19-inch pickerel.

An abandoned quarry in western Pennsylvania yielded a 21-inch bass to Castle Groves of New Castle. It weighed four pounds.

Warden Harry Z. Cole of Norristown reports that the Perkiomen furnished some fine early season bass fishing, a number of bass ranging from 15 to 22 inches being reported. An interesting angle to his report concerns the forage angle in the Perkiomen. Cole says that bass are running very heavy in proportion to length, indicating that an abundance of forage is present in the stream.

Frank Gable of Boyertown Was a Proud Boy When LaMar Mumbar Photographed Him
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PENNSYLVANIA ANGLER

CARP CAUGHT IN PERKIOMEN CREEK

Photo by LaMar Mumbar

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OCTOBER
1936

OFFICIAL STATE PUBLICATION

PENNSYLVANIA ANGLER

OCTOBER, 1936
Vol. 5 No. 10

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ALEX P. SWEIGART, Editor
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Vol. 5 No. 10

PENNSYLVANIA ANGLER

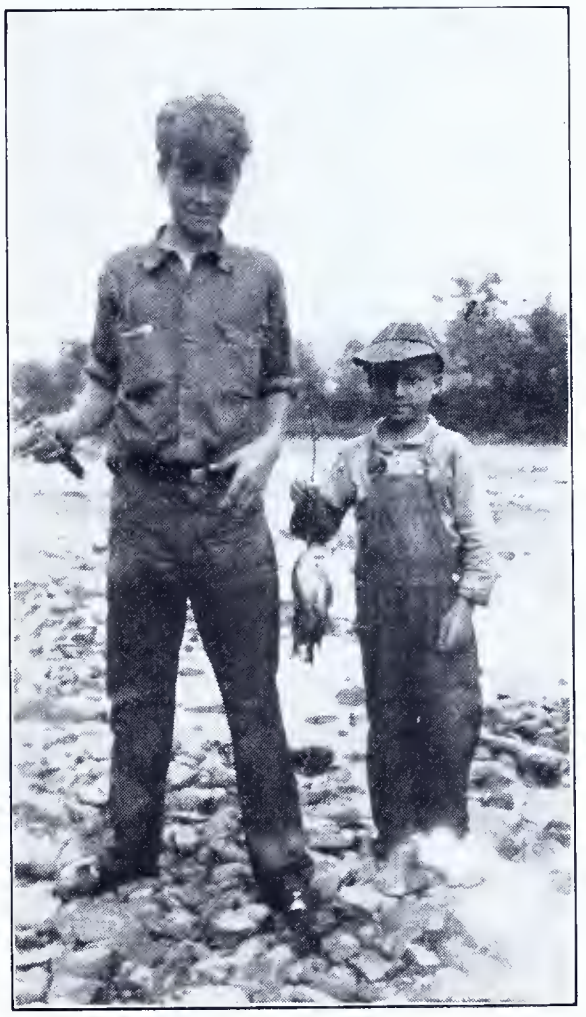
OCTOBER, 1936

EDITORIAL

JUST STILL-FISHING

In the past, I have commented frequently on the various forms of fishing indulged in by our Pennsylvania fishermen. While a constantly increasing number of anglers are turning to fly fishing for trout, and bait casting for bass and warm water game fish, artificial lure fishing, we still have a large group of anglers who derive great pleasure in still-fishing for popular pan fish such as the sunfish and catfish, and for suckers and carp. I am convinced that no finer cross-section of inland water fishing can be obtained than this balanced interest which exists for the various forms of angling. Still-fishing is, after all, the most elemental type of fishing, and it offers opportunity for restful recreation not excelled by any other method.

But we have neglected an angle to still-fishing that is perhaps most important. I refer to its appeal to the beginner in fishing, its appeal particularly to our sportsmen and sportswomen of tomorrow, the boys and girls who today find healthful recreation along our inland waterways. For this group, with perhaps a few exceptions, the appeal of fishing with a can of worms, an old cane or cut pole and other equipment to match serves as an opening wedge to the splendid sport that they may find in later years on our streams and lakes. We must not lose sight of the fact that first of all, interest must be awakened in fishing for the boy or girl. Later in life, of course, that interest will probably expand to include fly fishing and other more intricate



Still-fishing appeals to the beginner in fishing.

types of angling. Still-fishing, then, must be reckoned on this score alone a vital part of modern angling.

It must not be supposed, however, that this type of angling requires no skill. To the contrary, some of our most skillful anglers today are still-fishermen, that is if we take into consideration their knowledge of stream conditions and of the habits of the fish they angle for. Take, for instance, a veteran sucker fisherman. Nine times out of ten, if you talk to him, he can give you some angles on the fishing game that may never have occurred to you. He may tell you, for example, if it is in early spring, just how far upstream the sucker run has progressed; his observations on the condition of the water as it affects the feeding of the sucker, on the position of the baited hooks as they rest on the stream bed to be most effective and various other features of sucker fishing will indicate a striking knowledge of this phase of angling. He has amassed, during many quiet hours spent on the banks of a favorite sucker fishing hole, many practical facts relative to the fish life of the inland waters. In other words, he is a true exponent of greater knowledge of the Waltonian sport.

Tolerance is a fine virtue and I am convinced that our great fraternity of fishermen possess it to a marked degree. "Each man to his own way of fishing" seems to be an accepted creed with anglers, a creed that tends to develop fellowship of the highest character.

In the large group of still-fishermen are many fine sportsmen. It is my belief that each year there is a growing tendency to take, not all an antiquated law permitting the capture of, say, 25 suckers in a day's fishing, specifies, but only enough to provide a good meal for the family. With the cooperation of our still-fishermen and other groups indulging in the various forms of angling, we are certain to achieve in the years to come the better fishing which we desire.

O. M. Deibler

Commissioner of Fisheries

BASS STREAM INSECTS

by CHAS. M. WEIZEL

MOST of us know that the majority of our trout flies have a prototype, and the question naturally arises whether bass flies, too, were not patterned after natural insects. From the year 1496, when Dame Juliana de Berners wrote her "Treatyse of Fys shynge wyth an Angle," great strides have been made in the determination, imitation and classification of insects on which fish feed. Trout stream insects naturally received the greatest amount of attention, for the trout is an inherent surface feeder, has always been the most popular fish, and the majority of aquatic insects fall within the range of its diet. Bass on the other hand were more or less neglected. We have no close imitations of natural insects; the flies we use are merely large trout flies or the gaudy creations which arouse the fury of the fish or appeal to its hunger. Bass like trout have a group of insects on which they prey—insects, dull of coloration, larger than the usual run of trout flies and considerably more difficult to imitate. With them we shall deal.

Dragon Flies and Damsel Flies

Among the most ubiquitous of the larger insects are the dragon and damsel flies. In our childhood days they were known under the dreaded names of "snake feeders" and "snake doctors," and weird and mystic were the tales woven around these swift flying creatures. As we grew older, and never having witnessed aid being given to moribund reptiles, we came to ridicule these stories and accepted the insect for the harmless creature that it is.

Both the dragon and damsel flies belong to the order of Odonata and their life histories in general are very similar. The nymph is an aquatic insect and is commonly found under stones, among dead leaves and other debris on the stream bottom. Preying on small fish, nymphs and the larvae of other insects, it is a voracious creature, occasionally turning cannibal and eating its own kind. How voracious they are may best be illustrated by an experience that occurred a few years ago.

On the Patapsco River in Maryland, while searching for dragon fly nymphs which I intended placing in my aquarium, I observed a curious phenomenon. This was a multitude of small transparent eels known as elvers, which were making their wiggling way in broad daylight, upstream to the fresh water. Never before nor since have I witnessed anything like it! Scooping up some twenty, all of which were the same size—about two and a half inches long—I placed them in the same container with two large dragon fly nymphs I had previously caught. The following morning only two of the eels remained living—the rest had all been killed by the voracious insects. The two survivors were later presented to the Philadelphia Aquarium, and to the best of my knowledge are still there.

The above incident fittingly typifies the killing lust with which these insects are afflicted. Living thus, and killing whatever it can, the time rapidly approaches when it transforms into the winged fly.

At this period, the insect crawls up the stems of convenient plants and just above the water its metamorphosis is effected. Oft times we can see these cast skins sticking fast to some support, usually in a sprawling attitude close to the water.

Now in the perfect stage it becomes an animated creature, darting here and there on swift sure wings in search of its principal food, mosquitoes, gnats and midges. Like an avenging demon bent on swift destruction, it bears down on these luckless pests—so swiftly that the eye can scarcely follow it, probably later reappearing and resting unconcernedly on the tip of our fish rod. It is no uncommon sight to see them flying around ovipositing in pairs; and the male clasping her prothorax with his forceps, his body sticking straight up in the air, is oft times carried beneath surface of the water as the female descends to insert her eggs thickly in the green stems of aquatic plants.

Some of the largest species of dragon flies have a wing spread in the neighborhood of five to six inches, but damsel flies seldom attain the size of the one I pictured. This sketch was purposely enlarged almost one and a half times in order that it would fit the sheet.

By remembering the following simple facts, the two insects may be readily separated and identified. The wings of dragon flies are noticeably different in shape and venation and are always extended horizontally from the body when the insect is at rest. Damsel flies on the other hand are much the opposite; the wings are essentially alike and are usually closed above the body during repose. The damsel fly nymph may be recognized by its slender body and by the presence of three leaf like tracheal gills attached to the tip of the abdomen. These are not present in the nymph of the dragon fly.

From autopsies made on various bass I killed, I am led to believe that the nymph is much preferred as an article of food. Seldom have I found evidence of a winged fly being eaten, nor from a lifetime's experience on our streams, can I recall many instances where bass rose naturally to the dragon fly. It has frequently been brought to my attention that our Pennsylvania bass are not as active in surface feeding, as are some of other states—a fact which no doubt accounts for the presence of a majority of nymphs in the stomachs of fish that were examined.

The Helgramite

The helgramite belongs to the order of Megaloptera and is known among entomologists as Corydalis cornuta. Found under the stones in the swift shallow riffles, this carnivorous insect is so common that a description appears unnecessary.

It is black in color, vicious in appearance and equipped with strong, predatory jaws or mandibles. During the winter they can be found buried some distance below the stream bed. In various localities they are known under different names as Clippers, Dobsons, Hell Devils, Hell Divers, Conniption bugs and others, but regardless of what they are called, this insect is an universal favorite with the live bait fisherman.

The mature larvae (about three inches in length) leaves the water in late May or June and pupates in cavities under flat stones near the stream. The pupae at this time especially after the shedding of the last larval skin, is almost white in color.

About a month after the period of emergence the metamorphosis is complete and the adult insect is commonly observed flying over the water after sundown. They are more or less crepuscular and are often attracted to lights at night.

The male in the adult stage is conspicuous with his extra long mandibles (over an inch in length), which are used in clasping the female while mating. The length of life in the winged insect varies from one to two weeks, a period strikingly in contrast to the three years spent in the sub-aqueous larva stage. Eggs are laid on the rocks under which the larvae live. These egg masses average seven-eighths of an inch in length and are covered with a white or cream colored secretion. Sometimes they are so abundant as to make the rocks look as though some one had splashed whitewash upon them profusely with a brush.

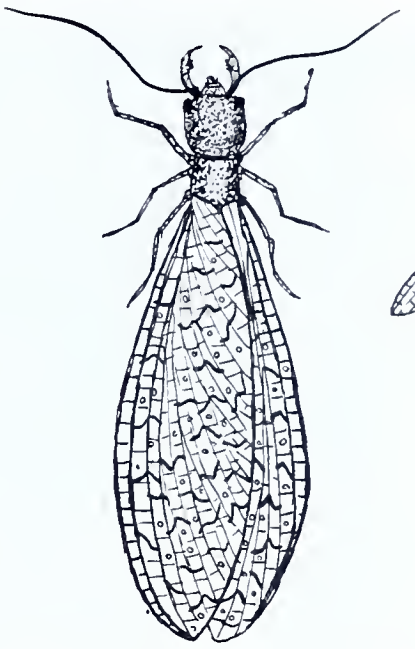
For those desirous of securing more information on this insect, insofar as relating to bass fishing is concerned, may I refer them to a former article of mine in the November, 1934, issue of the ANGLER.

The Stone Fly

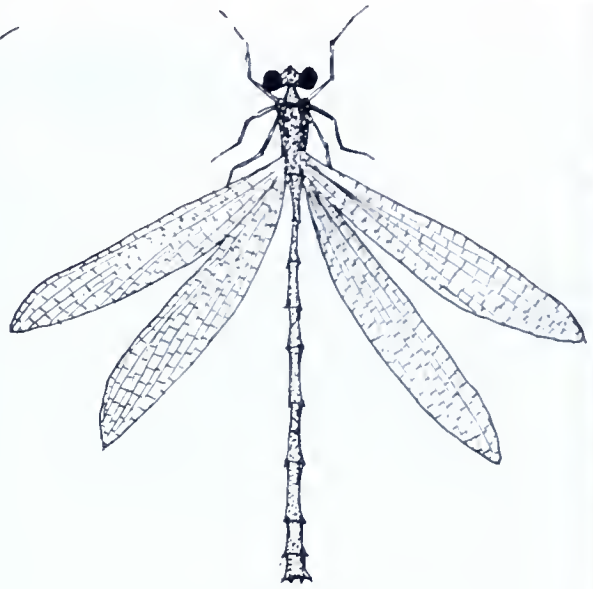
The stone fly (order Plecoptera) is generally regarded as a trout fly, yet it is quite commonly found on our bass streams, especially those that flow swiftly over a rocky bottom. The cast skins of the nymph—remarkably like the natural insect and with a gaping slit on the back where the fly escaped — are commonly observed on the rocks bordering the stream. Although stone flies vary from a half to an inch and a half in length, I believe that only certain of the larger species of the genera Perla and Pteronarcys are favored as food.

Bass in general like a large meaty bait. Although we frequently hear of trout sixteen to eighteen inches long being taken on a number twenty fly, yet it is an extremely rare occurrence when a bass of the same size would pay any attention to such a small offering. The remedy then would be to construct our imitations of the same size as the natural insect. But it is not so simple as all that; the difficulty lies in the size—many of our insects vary from two to three inches in length, and regardless of how closely we imitate them, the deception is still too apparent. The smaller the fly, the more natural it appears to the fish—a theory borne out by the continued successful use of small flies for trout when the streams are low and clear. And bass are much like trout insofar as detecting anything unnatural in appear-

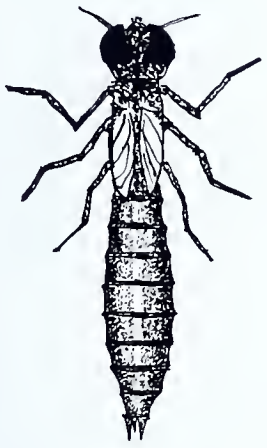
DRAGON FLY



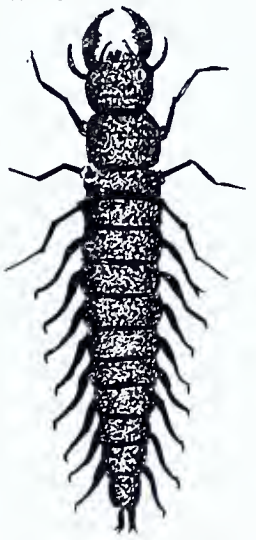
DOBSON FLY



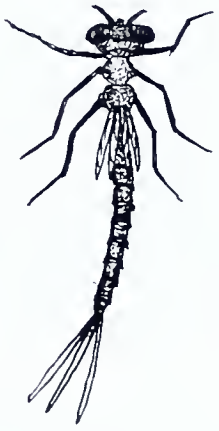
DAMSEL FLY



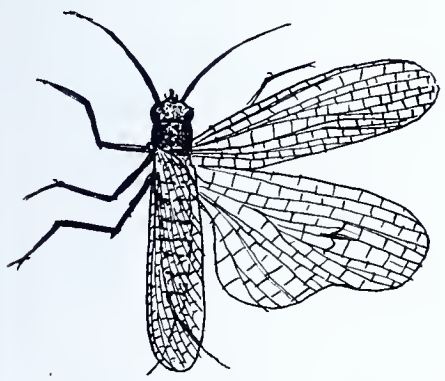
DRAGON FLY NYMPH



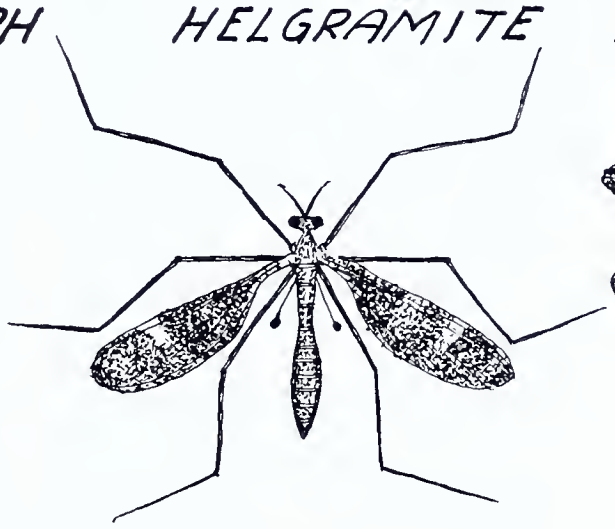
HELGRAMITE



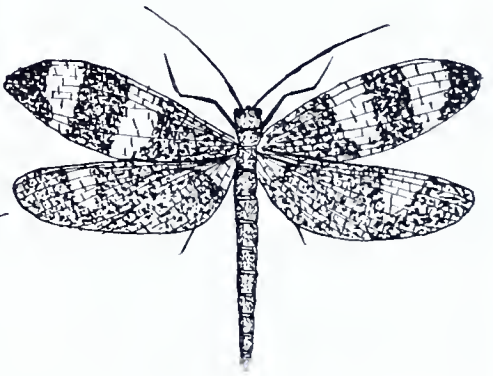
DAMSEL FLY NYMPH



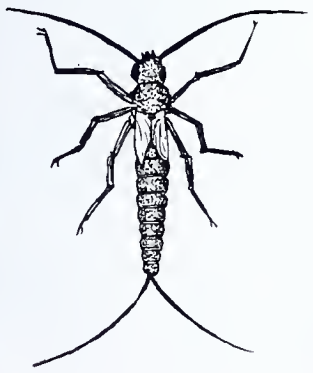
STONE FLY



CRANE FLY



FISH FLY



STONE FLY NYMPH

CRANE FLY LARVA

FISH FLY LARVA

Wetzel 8-36

ance. All of which, while still not offering any solution to the problem, nevertheless explains the principal reason why bass stream insects are not more closely approximated.

The Crane Fly

Crane flies belong to the order of Diptera, family Tipulidae, and are readily distinguishable by their long fragile legs. The larvae of most species live in the earth, but some exist in the water logged stems of dead twigs and others in the muck and dead leaves of the stream bottom. Although the adult fly is most abundant in the fall, yet certain species can be seen flying over the water throughout the summer.

The Fish Fly

The larva of Chauloides lunatus, the fish fly, resembles the helgramite very much in its general appearance. In fact, it is another of the Corydalidae and like the Dobson makes its home under the stones in the stream bed. This insect seems to prefer waters of low temperature, especially those that are capable of supporting both trout and bass. I have found it on Pine Creek, Kettle Creek and the upper Penns Creek—all fairly cold streams.

The adult fly, conspicuous by its light brown and black barred wings, appears over the water in May and early June. On streams where this insect thrives, the larvae appears to be quite plentiful, but I have never found the winged fly in great abundance.

Probably the greatest number I have seen in the air at one time was a few years ago on Weiker Run, when I counted fourteen that were within the range of my vision. At that time, I procured a number of specimens which I later used in fashioning the fish fly—a trout fly that has since proved to rank among the highest. Naturally, the fly is considerably smaller than its prototype—a fact that does not appear to lessen its fish taking propensities in the least. On the other hand, I have tried this fly almost to the exact size of the natural insect, but it appears to be no more attractive than any other creation.

In general, with the exception of the shad and some large caddis flies, insects indigenous to certain streams — the flies treated above represent the principal natural insect food of the bass. We have in addition the grasshoppers, locust, etc.—land flies that appear on the water only as casualties, and in an article of this kind, it is impossible to treat them all in detail.

JULY STOCKING

During July, hatcheries of the Fish Commission distributed a total of 51,442 fish of the various species in Pennsylvania waters. Included in the distribution were 16,030 brook trout averaging 8 inches in length, 6,000 brook trout fingerlings, 24,326 brown trout from 8 to 14 inches, 3,764 rainbow trout, 9 to 14 inches, 30 adult bass averaging 12 inches, 40 catfish averaging 7 inches, 374 adult suckers, averaging 10 inches, 53 adult sunfish averaging 5 inches, 320 adult perch averaging 8 inches and 505 muskellunge from 6 to 12 inches.

The following waters in the different counties were stocked:

BEDFORD—brook trout, Cove Creek, tributary Raystown Branch Juniata River, Shermans Valley Run, tributary Raystown Branch Juniata River.

BLAIR—brown trout, Clover Creek, tributary Frankstown Branch Juniata River; brook trout, Pine Run, tributary Frankstown Branch Juniata River, Frankstown Branch of Juniata River.

BUCKS—brown trout, Pine Creek, tributary North Branch Neshaminy Creek, Mill Creek, tributary Neshaminy Creek; brook trout, Cooks Creek or Durham Creek, tributary Delaware River.

CAMBRIA—brook trout, Beaverdam Run or Big Killbuck Creek, tributary Clearfield Creek.

CARBON—brown trout, Hayes Creek, tributary Lehigh River, Pohopoco Creek, tributary Lehigh River; brook trout, Drakes Creek, tributary Lehigh River; rainbow trout, Big Bear Creek, tributary Lehigh Creek.

CENTRE—brown trout, Spring Creek, tributary Bald Eagle Creek, Bald Eagle Creek, tributary West Branch Susquehanna River, Logan Branch, tributary Spring Creek, Elk Creek, tributary Pine Creek, Little Moshannon or Black Moshannon Creek, tributary Moshannon Creek, Marsh Creek, tributary Bald Eagle Creek; brook trout, Six Mile Run, tributary Moshannon Creek; rainbow trout, Spring Creek, tributary Bald Eagle Creek, Penns Creek, tributary Susquehanna River; catfish, Little Moshannon Creek or Black Moshannon Creek, tributary Moshannon Creek; suckers, Little Moshannon Creek or Black Moshannon Creek, tributary Moshannon Creek; sunfish, Little Moshannon Creek or Black Moshannon Creek, tributary Moshannon Creek; yellow perch, Little Moshannon Creek or Black Moshannon Creek, tributary Moshannon Creek.

CHESTER—brown trout, White Clay Creek, tributary Christiana Creek, rainbow trout, White Clay Creek, tributary Christiana Creek.

CLEARFIELD — brown trout, Mosquito Creek, tributary West Branch Susquehanna River; brook trout, Montgomery Creek, tributary West Branch Susquehanna River.

CLINTON—brown trout, Left Branch Young Woman's Creek, Young Woman's Creek, tributary West Branch Susquehanna River, Lick Run, tributary West Branch Susquehanna River, Right Branch Young Woman's Creek, tributary Young Woman's Creek; brook trout, Cedar Run, tributary Big Fishing Creek, Big Fishing Creek, tributary Bald Eagle Creek; rainbow trout, Big Fishing Creek, tributary Bald Eagle Creek.

COLUMBIA—brown trout, Fishing Creek, tributary West Branch Susquehanna River.

CRAWFORD—brown trout, Little Sugar Creek, tributary French Creek, muskellunge, Conneaut Lake, Drakes Pond.

DAUPHIN—brook trout, Stoney Creek, tributary Susquehanna River.

DELAWARE—brown trout, Ridley Creek, tributary Delaware River.

ELK—brown trout, West Clarion Creek, tributary West Branch Clarion River; fingerling brook trout, Little Wolf Lick Creek, Medix Run, tributary Bennetts Branch, Moshannock State Forest.

ERIE—muskellunge, Edinboro Lake, Lake LeBoeuf.

FAYETTE—brook trout, Mill Run, tributary Indian Creek; rainbow trout, Dunbar Creek, tributary Youghiogheny River.

FRANKLIN—brook trout, Conococheague Creek or East Branch Conococheague Creek, tributary Potomac River.

FULTON—brook trout, South Brush Creek, tributary Brush Creek, Roaring Run or Meadow Ground Run, tributary Cove Creek, Oregon Creek, tributary Sideling Hill Creek.

HUNTINGDON — brook trout, Laurel Run, tributary Standing Stone Creek.

INDIANA—brook trout, Little Mahoning Creek, tributary Mahoning Creek.

JUNIATA—brown trout, Licking Creek or East Licking Creek, tributary Tuscarora Creek; brook trout, Licking Creek, tributary Tuscarora Creek.

LACKAWANNA—brown trout, Lehigh River, tributary Delaware River.

LEHIGH—brown trout, Cedar Creek, tributary Little Lehigh River; rainbow trout, Mountain Creek, tributary Swabia Creek, Cedar Creek, tributary Little Lehigh River.

LUZERNE—brown trout, Lehigh River, tributary Delaware River; brook trout, Wapwallopen Creek, tributary North Branch Susquehanna River.

LYCOMING—brown trout, Lycoming Creek, tributary West Branch Susquehanna River.

McKEAN — brown trout, South Branch Kinzua Creek or Watermill Creek, tributary Allegheny River; brook trout, Kinzua Creek, tributary Allegheny River.

MIFFLIN—brook trout, Treaster Valley Run, tributary East Branch Kishacoquillas Creek.

MONROE—brown trout, Brodheads Creek, tributary Delaware River, Middle Branch Brodheads Creek, tributary Brodheads Creek, brook trout, Pohopoco Creek, tributary Lehigh River; black bass, Pensyl Creek, tributary McMichaels Creek.

NORTHAMPTON—brook trout, Bushkill Creek, tributary Delaware River.

PIKE—brown trout, Raymondskill Creek, tributary Delaware River.

POTTER—brook trout, West Branch Pine Creek, tributary Pine Creek.

SCHUYLKILL — brown trout, Locust Creek, tributary Little Schuylkill River.

SOMERSET—rainbow trout, Laurel Hill Creek, tributary Casselman River.

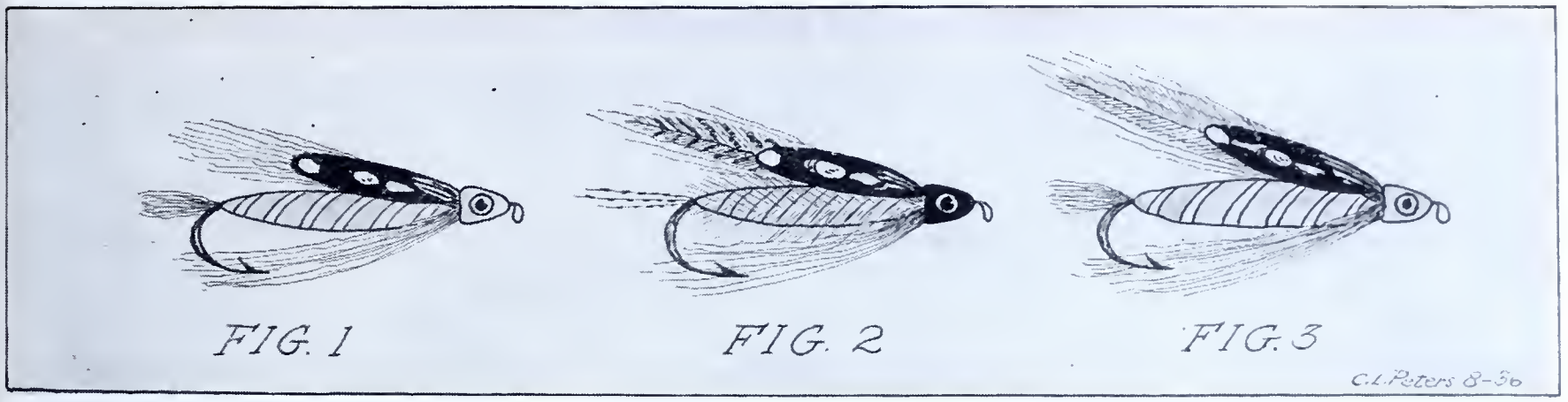
TIOGA—brown trout, Pine Creek, tributary West Branch Susquehanna River.

WARREN — brown trout, Pine Creek, tributary Caldwell Creek, Tionesta Creek, tributary Allegheny River.

WAYNE—brown trout, Dyberry Creek, tributary Lackawaxen River, West Branch Lackawaxen River, tributary Lackawaxen River.

MORE ABOUT BUCKTAILS

By CLAYTON L. PETERS



DURING the past several years Bucktail fishing has come to the front to such a degree that one can scarcely spend a day on any of our prominent trout streams without encountering some fishermen with a bucktail dangling at the end of a split-shot laden leader.

In 1934, Mr. Knight wrote an article for "Outdoor Life" entitled, "The Secret of Catching Large Browns." This article was so interesting and sounded so logical that I decided to spend a goodly part of my time a-stream experimenting with these new deceivers of the piscatorial tribe.

Many types and sizes of Bucktail lures can be purchased at the sporting goods stores, but for best results, I believe most anyone can tie an assortment that will answer better for various stream conditions.

Several sizes and patterns should be carried and for myself I prefer to carry five patterns tied on hooks sizes 6 to 10, although three patterns will suffice.

The type of Bucktail to be fished depends largely on the kind of trout for which you are fishing, and the type of water.

I have proven to my satisfaction that Rainbow trout are partial to a combination of gray and silver, while Brown trout are more easily deceived with brown, red and blue.

I always carry these patterns tied with Jungle Cock shoulders, and without, and have repeatedly cast over a trout with a plain bucktail, and after substituting it with the same pattern tied with Jungle Cock shoulders have had the trout strike on the very first cast.

It is not to be construed that Bucktail lures are only intended for trout, for large bass are as readily tempted with them. Following are descriptions of my three most dependable patterns.

The pattern used in Figure 1, is as follows: tail a part of red body material; body red silk floss banded with wide gold tinsel, bucktail on top of hook brown, and on under side white. Figure 2, tail several fibers from a gray Mallard drake feather; body silver tinsel, with a barred rock hackle tied palmer along the body, a pair of rock streamer hackles on top of hook and on under side a few strands of white bucktail. Figure 3, tail is a part of golden brown floss used for body which has a gold or silver stripe, top of hook has pair of brown saddle hackles tied over brown bucktail and under side of hook has white deer hair tied sparsely.

Although the illustrations show the use of Jungle Cock sides, they can be dispensed with as they are not as easily secured as the remainder of the material, although I am very partial to their use.

For the head I use either black, red or blue enamel as my fancy strikes me, and on the larger sizes an eye may be added by first placing a round spot of ivory enamel on each side of the head and when this has dried, paint a smaller spot of black in the center of each eye.

For the best results Bucktails should be fished well below the surface of the water and for this reason it may be necessary to use as many as six or eight split shot placed twelve or sixteen inches up the leader.

Leaders should be moderately heavy for good casting as the weight of the large lure with the additional lead have a tendency to cast in a jerky uncertain manner on a very light tapered leader.

There is no necessity for using a tapered leader in this type of fishing and if the water is slightly discolored, almost any heavy weight leader can be used successfully.

It would be quite a difficult task to even try to give definite directions as to how to fish bucktails most successfully, as geographical conditions govern this to a great extent, but where it is possible, a good bet is to cast to the far shore of the creek and by quick spasmodic jerks have the current carry it down stream and when the line used in the cast is expended, retrieve it up stream as far as possible before lifting it out of the water.

Very often a fish will strike at the point where the line arcs for the retrieve.

It is not unusual for a trout to repeatedly follow the Bucktail the entire course of the case and finally after having scrutinized it to his satisfaction, striking after as many as two dozen casts.

With the larger sizes a spinner can be attached and, skilfully handled under proper conditions, is an effective lure for bass or pickerel.

PROMPT ACTION SAVES BASS AT CORRY

Heavy loss in a pond of largemouth bass, ranging in size from 4 to 7 inches, was averted recently at the Corry hatchery in Erie County only by the prompt and efficient work of attendants. Spawned in early June, the young fish had developed rapidly in length and girth and apparently every condition was favorable. However, owing to heavy feeding, it is believed that some particles of food not eaten had accumulated on the pond bottom and this factor plus lack of wind and rain evidently resulted in an insufficient amount of oxygen in the water.

One morning an attendant noticed the bass, snouts extended above the surface, sucking air. The pumps were immediately started and the water aerated, with the result that only 30 of the 4,000 fish in the pond were killed.

HUNTINGDON OUTING ATTRACTS HUNDREDS

Hundreds of sportsmen from central Pennsylvania attended the annual field day of the Huntingdon County Fish, Game and Forestry Association, held at the fair grounds near Huntingdon on Saturday, September 19. Perfect weather prevailed. Trap shooting, shooting for turkeys, bait casting and plug casting attracted much attention and many entries registered for the various events.

Anglers present had a gala affair in every respect. Marshalled by Herb Watts, one of central Pennsylvania's most ardent devotees of Izaak Walton, they saw Kenneth A. Reid, Board Member, give a fine exhibition of the proper technique to be employed in fly casting and bait casting. Mr. Reid later judged the fly casting and bait casting contests for distance and accuracy.

Maurice Banker, Howd Shilling and the other livewire members and officials of this rapidly-growing sportsmen's group are to be congratulated on one of the most successful central Pennsylvania sportsmen's outings ever to be staged.

FUTURE TROUT STOCKING

Planting with Bigger Fish Is Imperative for Better Fishing

by ALEX P. SWEIGART

One of the Brood Rainbow Trout at Bellefonte Hatchery

FACING the facts in the present trout situation, we are convinced that the year 1936 will go down in conservation annals as the most destructive to our trout waters in the history of the Fish Commission. A summer of drought conditions, reducing the flow of many small mountain and meadow streams to pitiful trickles, was preceded by the March flood, one of the most destructive floods in history. From the angle of trout conservation, it was, in every sense of the term a freak year. After heavy snowfall had blanketed the watersheds of the trout streams during the winter, there was reason to hope that gradual melting of the snow in the spring would serve to restore the vital underground water table. But a quick thaw upset this hope and the snow, melting rapidly, pushed stream levels to flood stages in March. This rapid run-off, it is believed, precluded to large extent the benefit of the snowfall to underground streams and springs.

The drought which followed struck an even more disastrous blow to trout waters. It is a recognized fact in fish culture that the capacity of a stream to maintain aquatic life is to be determined only when that stream is at its lowest level. Since many of the streams affected were so-called nursery waters, tributary to larger trout streams, their capacity as spawning areas and stream sections in which the young trout can pass through the early stages of growth before dropping into heavier water, has been seriously impaired. The capacity for forage production of hundreds of small streams has been drastically curtailed by the drought. Food producing riffles on these waters during August were observed to be reduced in water area from one-half to three-quarters of their normal width. Exposed to the air and sun as the stream flow dwindled, the dried- out portions of stream beds sustained heavy loss of aquatic organisms vital to the welfare of young trout.

Trout Forage Check-Up

Just how much damage was caused to our trout waters by the March flood? This puzzler confronted the Fish Commission during the spring, and it was decided to institute a food checkup on freestone and limestone trout waters. Two typical streams, Spring Creek in Centre county, representative of the limestone group, and Starrucca Creek in Wayne county, a typical freestone trout stream, were selected for the work. While results from the trout forage checkup on the Starrucca are not yet available, Spring Creek, generally regarded as an outstanding forage producer, has already yielded highly informative data.

It was found that this Centre County stream produced 48 pounds of trout food per acre, or 12 pounds of dehydrated trout food. Any trout fisherman familiar with the stream in the past has probably been impressed with the abundance of aquatic life present. Fed by giant limestone springs, Spring Creek varies but slightly in water flow during drought periods, and at all times retains levels high enough to insure the safety of the trout present. During the flood, it became extremely high, however, and it is believed that the surge of flood water may have severely injured the food supply present. Unfortunately, no data was available as to forage production, prior to the flood, with which the forage yield this year may be compared. Owing to the fact that the drought had comparatively little effect on this particular stream, there is reason to believe that the available supply of forage will come back fast. In this respect, Spring Creek must be ranked one of a few exceptions in Pennsylvania trout waters.

There are so many angles to the trout stocking problem, that the need for more knowledge concerning its various phases is increasingly apparent. For instance, in England, where perhaps a more intensive study of trout streams has been made than in any other section of the world, it has been found that the best stream available cannot support more than 12 pounds of trout per acre. If we consider many of our smaller trout waters, radically affected this year by drought as to forage production, and use the English figures for comparison, is it not possible that these streams might be overstocked with trout over legal size? This is just one of the questions that comes to mind relative to the present trout situation. That drought and flood this year have intensified the problem, there is little reason to doubt.

Stocking

At the present time, the trout situation in Pennsylvania shapes up something like this. Flood, in at least 75 per cent of our streams, has damaged the stream beds and curtailed the amount of natural forage available. Drought has injured in particular the smaller feeder streams generally used by trout as spawning and nursery areas. We must not discount the fact that, even though autumn rains and snowfall during the coming winter restore water levels in drought-affected waters, the damage to the food supply through exposure of large sections of the stream beds to sun and air will require at least a period of from five to ten years, with normal water flow in these streams, to restore them to their former status as forage producers. Nature's mending process is slow.

While many of our larger trout streams were also injured by the drought, sufficient water remained in most of them to insure fairly successful stocking this fall and next

spring. Which brings us to the topic of this article, the necessity of planting larger trout if we are to hope for good fishing during the next few years.

It is generally conceded by the sportsmen that only through the planting of fish from legal six-inch size to 14 inches has the Fish Commission been able to furnish fair trout fishing during the past six years of drought conditions. In our heavily fished streams, handicapped as they have been by unfavorable natural factors, it would be assuming a great deal to expect stocking with two and three inch fingerling trout to yield impressive results. Under regular feeding at the hatcheries, it is possible to produce trout of legal size and over in from 12 to 18 months. At the Huntsdale hatchery in Cumberland County, high temperature of the water during the winter months permits feeding virtually throughout the entire year, with resultant rapid growth in the fish. To compare this systematic feeding of the hatchery fish with the forage possibilities afforded trout in even our better trout waters at the present time would be ridiculous. Ultimately, we must realize that the future of our trout fishing rests in large part with the hatcheries that produce the trout for stocking.

Under normal natural conditions prevailing on our trout waters, it is fair to say that natural reproduction may be counted upon to furnish annually from five to 10 per cent of the total trout population. But, as we said before, 1936 cannot, in any sense of the word, be termed a normal year in its effects on trout environment. That heavy loss of young trout in drought-stricken streams this year occurred, there is little reason to doubt. Coupled with depletion of natural forage have been heavy inroads on the trout population by natural predators such as the watersnake. Definitely, the chances of wild fish to survive under conditions prevailing this summer were mighty slim in many of our streams.

The Year Ahead

While the trout fishing picture as presented is a gloomy one, there is a brighter side. Recent rainfall has improved stream conditions for stocking. If, as was the case last year, we have heavy autumn rains, the stocking of hundreds of thousands of trout, ranging in size from six to 12 inches and now available at the hatcheries, should be successful. These larger trout, having a surplus of flesh attained while in the hatchery ponds, should soon become accustomed to stream conditions and pull through the winter in good shape, particularly if stocked in larger waters.

Most vital of all, however, from the angle of next year's trout fishing, is the contemplated spring stocking program. We believe that spring stocking in effectiveness (if we consider the resultant catches made by the fishermen, and after all, this is what counts), is in a class by itself. There always will be, probably, a group of fishermen who deplore the catching of "hatchery fish." The fact remains that without these "hatchery fish" mighty few waters in Pennsylvania would yield sport worthy of the name.

Pennsylvania fishermen at their trout hatcheries now have available a magnificent supply of brook, brown and rainbow trout with which to restock the streams. In coloration, girth and activity, these trout leave little to be desired. When released in wild waters, they give promise of providing fine sport for the anglers who invade our streams next year.

It is becoming increasingly apparent here in Pennsylvania that the sport of trout fishing is a "dollars-and-cents" proposition of raising more trout with which to restock our heavily fished streams. Pennsylvania anglers, through their license fund, have insured a continuance of their sport through the maintenance of a chain of splendid hatcheries. This is "fishing insurance" of the best kind and in spite of natural handicaps, drought or flood, there will still be trout fishing.

Possibly, in say ten years, when environmental conditions on our trout streams have improved, the planting of fingerling trout may again prove a vital asset to the stocking program. Even today, some small, low temperature tributaries to larger waters are holding up well in spite of the drought, and are suitable for stocking with smaller trout, but generally speaking these waters are the exception rather than the rule. In the meantime, continued stocking with bigber trout must be the answer to continued good fishing.

Feeder streams were dangerously low this summer.

Since the fisherman, through his license fee, pays for the maintenance of his sport, a practical, hard headed way of summarizing the trout fishing situation would be: "Plant a thousand trout, legal size and over, big trout. If the fishermen succeed in catching 900 of them or more, so much the better. They're put out to be caught, and it's better to have them nestling in an angler's creel than providing food for the watersnake."

Maybe we're all wet on this creed, but that's how we look at it.

Stripping a Brood Rainbow Trout at Bellefonte Hatchery

A FISH SURVEY OF PENN'S CREEK

by CHARLES T. LONTZ

EDITOR'S NOTE: *In preparing this treatise on the range of species of fishes in Penn's Creek, Mr. Lontz has made a definite contribution to the study of fish life in Pennsylvania. We believe that it will prove most interesting to the readers of the ANGLER.*

THE purpose of this survey is to determine the range and distribution of species of fish common to the Penn's Creek region and to establish the fact that this stream is capable of supporting far more large game fish than it now contains.

In obtaining the necessary data, test seining was done at representative places. The seines used were a 16 by 4, and a 35 by 5 foot drag net, and a three foot scoop net. Specimen fish were retained, examined and identified in the Bucknell laboratory. Information concerning fish life was accepted from reliable sources.

The splendid cooperation of the Pennsylvania Fish Commission, the people owning the land along Penn's Creek, the competent guidance and direction of Dr. N. H. Stewart, and the laboratory facilities of Bucknell University have made this work possible. In preparing the list of fishes, reference has been made to the works of:

EGGELING AND EHRENBERG
1912. *Freshwater Aquarium*
FORBES AND RICHARDSON
1920. *Fishes of Illinois*
HUBBS, CARL L.
1926. *A Check List of the Fishes of New York*
JORDAN, DAVID STARR
1929. *Manual of the Vertebrate Animals of North Eastern United States*
NEEDHAM AND LLOYD
1930. *Life of Inland Waters*
NEW YORK BIOLOGICAL SURVEY OF THE OSWEGO RIVER SYSTEM
1927.

Description of the Stream

Penn's Creek has its source in Penn's Cave in Centre County, flows in an easterly direction through Centre, Mifflin, Union, and Snyder Counties, a distance of about fifty miles to Selinsgrove, where it empties into the Susquehanna River. The upper part of its course is through an open valley region to Coburn, Centre County, where it enters the mountains. In this upper part the stream is exposed to the sun, flows rather slowly, and contains numerous deep pools. The mountain region from Coburn to Glenn Iron has few deep pools. The current of the stream is rapid; and the banks of the stream are lined with trees which afford considerable shade. The lower part of the stream, from Glenn Iron to the Susquehanna River, flows through an open valley similar to the upper part except that it contains more deep pools, is less shaded, and consequently has a higher temperature. The larger tributaries of Penn's Creek are Sinking, Pine, and Elk Creeks in Centre County; Poe Creek in Mifflin County; and Lick, Panther, and Henstep Runs and Middle Creek in Snyder County; and Laurel, Sweitzer and Cherry Runs in Union County.

For the most part, Penn's Creek flows through rocks of the Devonian, Silurian, and Ordovecian periods. In many places through the mountain region the bed rock is exposed forming natural dams. The large boulders in the stream bed, as well as the roots of trees which lie on the banks, form small pools or pockets in which fish may hide. In the upper part and the lower part the stream is less filled with rocks, is somewhat sluggish, and contains much grass. The summer temperature in the upper part is from 76 degrees to 78 degrees Fahrenheit; the mountain region is from four to six degrees lower. This difference in temperature is accounted for by the spring-fed runs. In the lower part the temperature again rises to as high as 82 degrees.

There are several grist mills and three electric power plants which use the waters of Penn's Creek. In all cases the water is returned to the stream a few hundred feet below the mill. Over one hundred summer camps are located on the banks of the stream. Many of these camps are owned by clubs or groups of persons, so that during the summer several thousand people enjoy the fishing, swimming, and boating this stream provides. One point on Sampsell's Dam has fifteen camps in less than three-fourths of a mile along the stream. Few other streams in the state have more camps per mile; nor are there many other streams on which more fishing is done.

As a result of this concentration of fishing, the large fish are becoming rather scarce.

One unfortunate factor mars the perfectness of this picture. At several points along the headwaters of the stream, pollution occurs. Another condition which may have some detrimental effect on fish life is the eroded soil which is carried from the fields by heavy rainfall. If heavy rainfall occurs when fish are spawning, it is quite probable that many eggs are smothered by deposits of mud and silt.

On the banks of the stream are found such plants as the jewel weed, and meadow rue, aster, Joo Pie weed, pickerel weed, and perhaps others not noticed. Some of the more common trees are the black willow, American elm, basswood, and black birch. In the bed of the stream, islands of water willow are quite common. At one point in the lower stream nine-tenths of the creek is covered with water willow. Potomogeton, elodea, and myriopyllum sometimes fill in the creek from bank to bank. At only a few places are there cattail marshes and pond-lily beds.

Insect life, an important source of food, is plentiful. At many places thirty to forty damsel flies may be counted on plots of water willow two rods square. One or two Dobson fly larvae may be found on every imbedded stone the size of a man's head. Egg clusters of Dobson fly are abundant on overhanging trees and rocks. One oak tree above Glenn-Iron has several hundred white patches on it where it overhangs the stream. From three to five May, Stone, and Caddis fly larvae are found on every rock the size of a man's hand.

Animal life along the stream is almost as abundant as in the stream. Bull frogs, green-nosed frogs, pickerel frogs, leopard

The Golden Shiner was not caught in Penn's Creek.

frogs, spring peepers, and wood frogs are found, green-nosed and bull frogs being most numerous. Several species of salamanders, the newt, common cave, viscid, red, and spotted occur under rocks and in rotted driftwood.

Watersnakes abound in some of the old stone and log dams, as many as sixty-seven having been killed by one person in the course of a week's camping at Sampsell's Dam, July, 1934. Garter snakes, copperheads, rattlers, and black snakes are killed rather commonly in the mountain region. It is quite possible that the number of water snakes is decreasing due to the activities of fishermen who feel that "the less snakes there are, the more fish there will be."

Kingfishers, white, green, blue, and black-crowned herons, ospreys, spotted and solitary sandpipers are common near the water. Other common birds of field and woods are plentiful.

Muskrat, mink, raccoon, opossum, and skunks live in holes in the banks or the hollow logs near the stream. Squirrels, deer, rabbits, and occasionally a black bear, live in the woods near the edge of the stream.

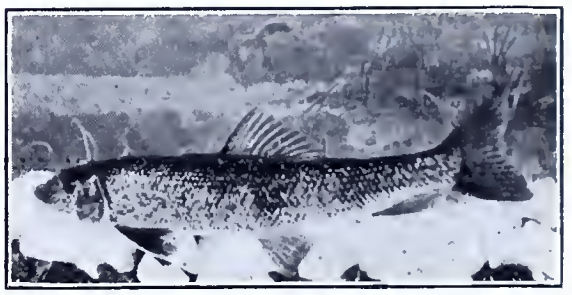
List and Description of Fishes

In presenting this list of fishes information is used from data gathered principally during the summer of 1935. Information, however, has been accepted from individuals who have lived along Penn's Creek for periods of forty years or more. This information is reliable. Some thirty-two species of fish have been taken, carefully examined, and identified.

1. Brown trout—Salmo fario (Linneaus) Large black and red spots, pectoral fin larger and heavier than brook trout, fins not barred. Common from Weikert to source.
2. Rainbow trout — Salmo irideus irideus (Gibbons) Colors usually duller, more silvery, head shorter and more pointed than brook trout. Stocked in stream in upper part, rarely taken, no indication that it reproduces in Penn's Creek.
3. Brook trout — Salvelinus fontinalis (Mitchell) Numerous small red spots, lower fins with bright edgings. Present at mouths of small streams in mountain region, common above Spring Mills, Centre County, and below Coburn, Centre County, for several miles. Plentiful in Elk Creek.
4. Common sucker — Catastenus commersennii (Lacepede) Head convex above, small scales, silvery on sides, brown or black on back. Common entire length of stream.
5. Mullet or Black sucker — Hypentelium migricans (Le Suer) Head concave above, body crossed by oblique bars. Common entire length of stream.
6. Chub sucker — Erimyzon oblongus oblongus (Mitchell) Lengthwise streaks or vertical bars or combination of streaks and bars, young striped, mouth subinferior. (Not taken but should be present.)
7. Carp — Cyprinus carpio (Linnaeus) Dorsal and anal fin with strong serrated spine, brown color, large scales, upper jaw with barbels. Common in deep holes and dams to Coburn. Occasionally found above Coburn. Introduced in Elk Creek, June, 1889, by flood which washed them from private pond of Charles Grimes who had them imported from Germany about 1883.

Pickerel are caught occasionally in Penn's Creek.

8. Hornyhead chub — Nocomis micropogan (Girard) Head of males in spring covered with tubercles between eyes and nostrils, caudal fin of young olive or amber, adults brassy on sides, greenish brown on top. Common on riffles from Spring Mills to mouth.
9. Black nosed dace or red fin — Rhinichthys stronasus (Cope) Small fish, blackish on back, black or brown lateral band, spring or cold water males with band and lower fin crimson, orange in summer. Common from source to Glenn Iron.
10. Long nosed dace or eel pike — Rhinichthys cataractae (Guvier and Valenciennes) Snout projecting beyond the horizontal mouth, black on back, dorsal fin amber. Common on riffles and swift rocky places Coburn to New Berlin.
11. Fall fish or white chub — Leucosomus corporalis (Mitchell) Slender silvery fish, bluish above, fins plain. Common from Coburn to Glenn Iron, occasionally found a short distance above Coburn and as far down as New Berlin.
12. Horned dace or common chub — Somatilus atromaculatus atremaculatus (Mitchell) Body robust, ducky, little silvery, black spot at base of dorsal fin in front. Plentiful in upper part of stream, less common in lower, common in mountain region.
13. Pearl dace — Margariscus margarita margarita (Cope) Belly reddened in breeding males, sides mottled or speckled with dark, mouth small, somewhat curved, snout becoming blunt with age. Common in Elk Creek but not taken in Penn's to date, August, 1935. (Species found in drainage)
14. Spawn eater or spot tailed minnow — Notropus hudsonus amarus (Clinton) Head more pointed than in cornutus, body more slender. Taken at Coburn and below New Berlin.
15. Common shiner — Notropus cernutus (Mitchell) Head less pointed, mouth more decurved, body stouter than hudsonus. Common from Coburn to New Berlin.
16. Larger silver fin — Notropus splopterus (Cope) Larger than whipplii, less deep, length is four to five times the depth, more than thirty seven scales in lateral line, 8 rays in anal fin, scales more diamond shaped. Taken below Sampsel's dam and below New Berlin.
17. Smaller silver fin — Notropus analostamus Smaller, deeper body, length 3½ to 3 2-3 times depth, lateral line less than 37 scales, 9 rays in anal fin, scales more rounded. Taken one mile above Sampsel's dam.
18. Rosy faced shiner — Notropus rubellus rubrifrons (Cope) Body long, slender, arrow-shaped, head and cheeks red in spring males. Taken in Sweitzer Run and below New Berlin.
19. Cut lips chub or black chub — Exeglossum maxillinque (Le Suer) Lower lip shaped like capital "W," bluish black on back and sides, silvery iridescent, body stout. Plentiful entire length of streams.
20. Golden shiner — Notemigenus crysoleucas crysoleucas (Mitchell) Body compressed, lateral much decurved, sides silvery with golden reflection. (Species not taken but should exist in slow, grassy eddies.) Note: The fact that no golden shiners were taken in Penn's Creek serves to substantiate data gathered to this time indicating that the species is primarily a pond and lake fish.
21. Blunt nosed minnow — Huberhynchus notatus (Rafinesque) Snout abruptly decurved, head rather long wholly black in spring males with 14 large tubercles. Taken above Sampsel's Dam, not plentiful.
22. Stone roller minnow — Campostema anomalum (Rafinesque) Brownish with a brassy luster above, scale mottled, males in spring with many rounded tubercles on head. Nests of Stone roller or Horny head plentiful in lower part of stream.



Common Sucker.

23. Stone cat — Schiloeodes insignis (Richardson) Small catfish, head broad, body not so deep as in Ameiurus. Extremely abundant from Coburn to mouth.
24. Common bull head — Ameiurus nebulosus (Le Suer) No scales, large flat head, body deep, brown or black on back, yellow on sides, white on belly, heavier than Schilbeedes. Common from Coburn to mouth, occasionally above Coburn.
25. Chain pickerel or pike — Esox Reticulatus. Head long, snout 2 1-3 in. head, greenish, with many dark narrow lines and streaks. Found from Cherry Run to mouth of stream. Not common anywhere.
26. Eel — Anguilla bostoniensis (Le Suer) Long slender snakelike fish, mouth similar to common fish, not round like lampreys; used to be plentiful entire length of stream but is gradually becoming extinct.
27. Top minnow or striped minnow — Fundulus diaphemus (Jordan and Copeland) Body rather slender, sides silvery with

(Please turn to page 13)

SMOULD'RIN' SMOKE

By KENNETH H. SMITH

IF YOU love the lonely lakeland, son, and yearn for the timber tall; if you thrill when a bass goes leapin', son, and when the wild geese call—then you're sure to get my meanin' when I try to make my point, and you'll not be judgin' harshly if my reasonin's out of joint.

I'm just a-goin' to jump in, son, and tell what I got to say, unless you've got some work to do—if so, I'll go my way. No? Then I'll set and say my piece. It don't amount to much. Just an old outdoorsman's musin's on some smokes and smells an' such.

There's a skad o' smoke a-smould'rin' underneath this old felt hat, just a-bubblin' and a-boiln' 'til we start to chaw the fat. And, son, the mem'ries those smokes bring would well-nigh fill a book, for they span a lifetime's lovin' of the bullet and the hook!

I'll just pack my briar full, son, of the necessary weed, an' take a coal to light her up—now there's a smoke indeed. A good old briar burnin', son, with me it tops 'em all—it's a magic smoke that somehow seems to bind us, brothers all.

Now, I'll ask you, son, to go with me, to a time of long ago—when I was just a wobbly cub of six or seven or so. I 'member my old Daddy, how he'd take his old cane pole, and with a pail o' shiners, he would head for the old bass hole.

An' I'd sit there a-snifflin' and a-tryin' to hide my tears, 'cause Ma, she said "No fishin', son, until you add some years." Well, there wasn't much of smell right then, if it came to askin' me, 'cause my smeller, it was all choked up—an' my throat was too. Aw, gee!

But then, when Daddy'd get back home my tears was all forgot, 'cause I'd sniff the smell of his fish, his pipe—the whole delightful lot; an' son, I'd swear to myself that when I'd ceased to be a lad, I was goin' to go a-fishin' an' a-huntin', just like Dad!

Say! 'Member how in autumn time, with bonfires in the air, the magic Indian summer smell would sort of make you rare and snort around and paw and prance, 'til Saturday would dawn, when you could load the old smoothbore and whistle "Sport! C'mon!"

An' 'member that black powder smoke you don't smell now-a-days How it stuck and hung on misty air, a heavenly hunter's haze? An' you sniffed it in with a canyon grin, although it stung your nose? If you'd a tail, you'd'a' wagged it then, smack dab back to your toes!

The heavy-hangin' wood smoke in the cabin on the lake—remember? Don't your old eyes smart when fire's on the make! Until she sorter starts to draw, with the draft exactly right, she fills your lungs and nose an' such, an' you're a smelly sight!

You open up the doors an' all, an' in comes good fresh air, and in two jerks the smoke's all gone, and only smell is there. That good old cabin's housed some smells that fairly make me wish that I was goin' there right now, to set an' smoke an' fish!

There's another smell that brings 'em back, those good old lakeland days—I don't refer to the pine-trees' breath, or the fragrant campfire blaze, but to a fume that's got its use, when time is kinda short. An outboard motor moves you fast, with all her rip and snort.

There's one more smell you can't forget—but 'tain't a pleasant one; that searin' scorchin' hell on earth, a forest fire, 's no fun! You can lay your bottom dollar son, when timber blazes start, they blind your eyes, they sting your lungs—they well-nigh burn your heart!

Recall the chilly mornings, son, when your blanket feels so good; I mind of one (I'd won the toss) and Partner fired the wood and boiled the pot and fried the trout and cussed my lazy pelt—while I just lay and soaked it in—how good that breakfast smelt!

I'm gettin' old, my fires soon are goin' to cease to burn; but, son, I know you younger bucks will never cease to yearn for the smell and smokes of the outdoors, and I'll be a-steppin' out content to know, it won't be lost, that smell of sizzlin' trout!

Well, lad, my pipe is all puffed out, and I'll be on my way, with a thankee, lad, for list'nin' while I've had my little say. Our outdoors smokes are dwindlin', son—t'will be an uphill fight—but keep 'em smould'rin' for your son. God bless you, and good night.

—The Minnesota Conservationist.

T. B. Fretz of Chambersburg with a 23-inch, 4-pound 3-ounce Brown Trout taken this year.

LANCASTER BOYS KILL WATERSNAKES

Ira E. Mellinger, president of the Lancaster County Fish and Game Association, reports fine progress in the campaign waged against the watersnake by the Association this year. Recently, "Uncle Dan" Schnabel, Board Member, approved the applications for conservation medals to be awarded by the Lancaster sportsmen and the Fish Commission to three Lancaster boys, each of whom has killed to date from 10 to 50 watersnakes. The youthful snake hunters are George C. Werntz, R. E. Wissler and Cecil Rhoads, all of Lancaster.

I jest got back from a run down ter the big river with Bill Tilfer. We was doin' some fishin' I never done afore, fishin' fer carp, an' boys I'm tellin' ye, I got the surprise o' my life. First off, after we got ter the river, Bill he baits the hooks with dough bait. We hed some sizable sinkers on our lines an' Bill showed me how ter cast 'em out.

Now Jerry, he sez ter me, jest don't git a-figgerin' thet these here carp is gonner hit like pike er bass. They does a lot o' cavortin' around easy-like with the bait afore they starts off with it. Let thet line go slack at the pole tip, an' jest set quiet.

Well sir, it was shore nice there along the river so early in the mornin'. We saw a flock o' wild ducks go scootin' by, an' I was watchin' a big white heron fishin', when Bill nudges me an' sez watch yer line. Thet line was actin' most all-fired funny. The slack'd stretch out an then ease back, stretch out an' ease back agin. Thet kept up fer nigh onter fifteen minutes an' I was startin' ter figger thet if this was carp fishin' I liked sucker fishin' better. Then all to once zing an' thet reel thet Bill hed loant me started ter screech like the dickens.

Sot the hook, yells Bill an' I sot it. I figgered right then, by gorry, thet I was hooked onter the bottom o' the river. Thet thar fish pulled like a span o' mules, an' once he swirled an' made me think thet he'd go fifty pounds. He's a dandy, sez Bill, an' if I ain't wrong he's a leatherback.

Well, sir, thet fish used up better part o' forty minutes afore I tired him enuf ter bring him in. He weighed jest a leetle better than twenty-two pounds, an' Bill claims thet thet size o' leatherback is one o' the best fightin' fish a man kin hook inter.

We ketched four more carp, all o' them scale carp thet day an' I'm sayin' thet my eyes sure was opened ter a new kind o' fishin' fer me thet's jest most all-fired good fun.

POLLUTION REPORTS

The law prohibits the pollution of waters of the Commonwealth by substances of any kind or character deleterious, destructive, or poisonous to fish. Any cases of pollution should be reported to the Sanitary Water Board, Department of Health, Harrisburg.

REPORT OF POLLUTION STUDY COMMITTEE OF THE AMERICAN FISHERIES SOCIETY

By TALBOTT DENMEAD, Secretary

Since our last meeting in Tulsa, Oklahoma, a year ago, much polluted water has passed under many bridges, resulting in the death of many fishes; there has been much talk about doing something about it, but like Mark Twain's famous remark about the weather, nobody has done anything. Little progress has been made in actually and permanently removing pollution; true some abandoned mines have been sealed in Pennsylvania and nearby states, a few city disposal plants have been planned, and in some instances completed. Lots of talk about more investigations has been heard—a favorite method of the polluters for delaying action—but as a whole, we are just about where we were a year ago; while we have cleaned up one spot, additional water contamination has occurred in others, while we talk, instead of playing a fiddle, like Nero, the fish die.

Pollution may be stopped in a way that is perfectly satisfactory to health officials, or to a point where it don't destroy cattle; but from the fish viewpoint, it is not so good; an industry with every good intention tries to prevent pollution by depositing its poisonous refuse in vats or other receptacles on the land, but an accident, an unusual storm, or some act of man, suddenly releases a large quantity of poison into the stream; it is in concentrated form, and in bulk—the fish are killed for miles down stream. Reports of dead fish reach the ears of state authorities, investigation is made, the parties responsible are very sorry, and promise not to let it happen again, but the fish are all dead, and it will take two or three years to replace them; and the angler can wait; by the time his interest and work and that of the State authorities at considerable expense have brought back the fish supply to almost normal, another "accident" occurs, and the angler and the state conservation authorities can begin all over again. How long, Oh, Lord, how long? Is it not time something is done besides investigating, leaving it to health departments and inadequate or unenforced state laws to clean up our streams?

Someone has said the industries have always polluted our streams and have a right to continue to dump their refuse into the public waters. They are wrong—a man can obtain title to a piece of land by eminent domain, or a right of way by prescription, but he cannot obtain a right to maintain a nuisance.

So what?

The States for years and years have been continuously trying to stop pollution, with little success, either the laws were not sufficient, or not enforced, or the polluters were too big; fish continue to die off from poisons dumped into public waters; Waste. Scientists are still investigating, and can continue to do so for generations, but their findings alone will not save fish.

These fish were picked up on 60 feet of shoreline on the West Branch of the Susquehanna River, polluted during the summer.

What then?

Some control extending beyond the jurisdiction of the locality where pollution occurs, big enough to control an offending corporation with pull, and covering all the polluted water, whether in one or more states—something with a punch in it to be used if and when necessary that can actually make a polluter stop polluting, when reason fails.

The answer.

Your committee members have various views on the subject; certainly a majority favor Federal control of some kind; many favor the Lonergan Bill, as is, or with slight amendments. Your secretary does not mind who knows it, he is in favor of the LONERGAN BILL, which was favorably reported by the Senate Committee with slight amendments at the last session. Let me quote you a few extracts from letters recently received from members of one committee.

"No legislation will be of any value in the move to suppress stream pollution unless it incorporates the following three principles: *First*, that it provide a clearing house for information, and an opportunity of cooperation between the Pollution Board and the polluters; *Second*, that it provide means of financing municipal sewage and trade waste, disposal plants by loans of Federal funds, and so far as municipalities are concerned, by a grant of part of the cost, on the theory that it is as much the concern of the Federal government, to safeguard the quality of the water, as it is to dredge our channels; *Third*, that it gives power to the pollution abatement agency to compel polluters, who will not cooperate voluntarily, to do so." I might say that the only one of the bills pending in Congress incorporating these three things is the Lonergan Bill. I might also add, this bill does not conflict with the doctrine of State's rights, for the Federal control only extends to navigable waters, and such tributaries as affect navigable waters. Beyond that, a Federal board cannot and should not go.

I quote from another reply: "It seems to me that the most important matter in the pollution situation is the proposed national legislation . . . I am thoroughly convinced that any legislation which does not give authority to initiate action in some Federal agency will not accomplish the purpose desired . . . . There are certain fundamental features in the Lonergan Bill, back of which I believe we must stand if real accomplishment is to result. There are other features in which modifications might well be made to meet objections."

Another: "May I frankly say, that in my opinion the committee has not discharged its full duty to the American Fisheries Society, and to the country in the reports which have been made. Through outside pressure it has shown too much of the weak and foolish policy of pitying the evil doers and neglecting the public rights which have been violated and public values which have been destroyed . . . . I would suggest that arrangements be made to have the committee embark at once on an actual study and discussion of the situation. The work should begin in September in order that proper progress may be made before the matter is taken up in the coming session of Congress."

In considering this suggestion your secretary advises a reorganization of the committee, members to be selected by the incoming officers of the association.

Several members have written in that they have no suggestions to make in regard to a report.

AT MEET OF UNITED SPORTSMEN NEAR WILKES-BARRE

Photo Courtesy: Sunday Independent, Wilkes-Barre

State officials joined with members of United Sportsmen of Pennsylvania in their annual convention at Harrison's Park. Blakeslee. First row, left to right: Joseph Marcinkus Hazleton; F. E. Haegele, Hazleton; H. S. Smith, Wilkes-Barre; O. M. Deibler, Commissioner of Fisheries, Harrisburg; J. Q. Creveling, Wilkes-Barre; S. J. Truscott, Board of Fish Commissioners, Dalton; Dr. J. F. Bogardus, Secretary of Forests and Waters, Harrisburg; Seth Gordon, Executive Secretary, Board of Game Commissioners, Harrisburg; E. F. Smith, Wilkes-Barre; Ray Wootten, Sugar Notch; Steve Emanuel, president of Wilkes-Barre Branch.

Second row: Bert Colley, Dr. C. A. Mortimer, Morris Kemmerer, Abe Lewis, P. M. Skierka, Stanley Mesavage, Allen Bacon, Sr., Antonio Petrerio, Greenwood; Joseph Potocki, Greenwood; Harry Nicholson, J. T. Neiger, Scranton; Floyd Baker, Scranton; John Lizstus, Fred Goeringer, Luther Kniffen, Otis Skid.

Third row: Paul Milbrodt, Floyd Ramage, West Pittston; Thomas Hewitt, Wilkes-Barre; P. J. Connor, Swoyerville; Joseph Foley, Georgetown; Allen Bacon, Jr., Thomas Bradshaw, Sugar Notch; Joseph Sokolewski, Henry Fassett, Meshoppen, Floyd T. Sensinbach, White Haven; Michael Ripa, Kingston; Clinton Ide, Dallas; John Chechourak, Duryea; M. F. Terisinski, C. R. Kelchner, Forty Fort.

NURSERY WATERS CLOSED TO FISHING

Following is a list of nursery trout waters closed by the Board at its last meeting, August 10th, 1936:

Somerset County

Blue Hole Run, tributary to Laurel Hill Creek.

Three miles of Brush Creek, tributary to Wills Creek.

Butler County

Municipal Reservoirs of the Boro of Zelienople.

Luzerne County

About one-third Sugar Notch Dam.

Pike County

Portion of Promised Land Pond.

KILLS 61 WATERSNAKES

Thomas Baker, 14 years old, of Crooked Creek, Tioga County, has established a commendable record in watersnake killing this season, according to Warden Leland Cloos. Tom has killed 61 snakes so far, most of them along Crooked Creek. A great deal of interest has been aroused in Tioga County sportsmen circles by the vermin contest of the Tioga Rod and Gun Club this year.

WISSAHICKON PROJECT POPULAR THIS YEAR

The picturesque Wissahickon Creek, flowing through Fairmount Park, Philadelphia, proved exceedingly popular with trout fishermen in the Quaker City during the past trout season, according to a report received by the ANGLER. Park guards reported counting 3663 anglers during the days specified for fishing in the stream, and reported inspecting a total of 951 trout which had been taken. On the first day, 437 fishermen tried the improved sections of the stream.

Anglers and guards reported the killing of 114 watersnakes in that section. The project was stocked prior to and during the season with brown and rainbow trout well over six-inch legal size. An interesting angle to the checkup on catches indicates that many anglers fished for the sport alone, returning all fish landed to the stream.

The Wissahickon is a splendid example of the kind of fishing that can be afforded, even in densely populated sections of the state, through proper stream management. Board Member Edgar W. Nicholson, who was directly responsible for the improvement of the Wissahickon as a Public Works Project, is to be highly commended for the fine showing the project made this year.

Hungry Diner: "Waiter, will the griddle cakes be long?"

Waiter: "No, sir, round."

A FISH SURVEY OF PENN'S CREEK

(Continued from page 9)

15 to 25 narrow dark vertical bands, fins plain. Taken at Bishop's and Cider mill below New Berlin. Rare (see Map).

28. Yellow perch — Perca flavescens (Mitchell) Body deep, compressed fins spiny, scales tough, body olive yellow with dark transverse bands. Taken from Glenn Iron to New Berlin, rare, becoming extinct.
29. Shielded darter — Hadropterus peltatus Similar to Johnny darter (No. 30) but more distinct vertical bars and definite black stripe through first dorsal fin. Taken at New Berlin, Glenn Iron, and Coburn. Scarce.
30. Johnny darter — Boleosoma nigrum olmstedi (Storer) Body slender, snout somewhat decurved, mouth small sub-inferior, light sandy brown color, back speckled with brown. Abundant entire length of stream.
31. Small mouth bass — Micropterus dolomieu (Lacepede) Upper jaw extending beyond middle of pupil but to high margin of eye. Common Coburn to mouth.
32. Eastern long eared sunfish — Lepomis auritur (Hubbs) Operculum much elongated, bluish purple in color. Common Coburn to mouth.
33. Common sunfish or pumpkin seed — Eupomotis gibbosis (Linnaeus) No extension but tip of operculum with conspicuous red spot. Forehead steeper than blue gill or long eared, body stouter than long eared. Common Coburn to mouth.
34. Rock bass or goggle eye — Ambloplites rupestris (Rafinesque) Very large red eye, sides brassy, olive green, young more mottled with dark. Common Coburn to mouth.
35. Gruntling or miller's thumb — Cottus cognatus (Richardson) Large headed, spiny, reddish brown or green phases, dark bars, usually much broken. Glenn Iron to source, common.

This survey indicates the economic value of Penn's Creek as a commercial and recreational item. The recreational advantages can be improved without interference with the commercial interests by:

1. Stream improvement
   a. Building of retards and current deflectors, particularly in upper part and mountain part of stream.
   b. Increased stocking of game fish
      1. Suggested list of fish
         Source to Spring Mills
            Brook trout
         Source to Weikert
            Brown trout
            Fallfish or white chub
            *Suckers
         Weikert to mouth
            Large mouth bass
            Small mouth bass
            Rock bass
            Sunfish
            Yellow perch
            Catfish
            *Suckers
2. Prevention of pollution
   a. Increased fine, $5,000 instead of $100.
   b. More effective laws prohibiting disposal of junk and garbage by dumping along stream.
   c. Enforcement of city sewage disposal laws.

*Document No. 1007, Department of Commerce, Bulletin of the Bureau of Fisheries, Volume XLII, 1926, page 183.

"In November, 1922, twenty 6 to 8-inch suckers were collected directly over the newly made nests of brook trout, where eggs were doubtless abundant in the gravel. As not a single fish egg was found in these or in over 200 other sucker stomachs examined it seems safe to assume that fish eggs are rarely taken by this species."

TULPEHOCKEN CATCHES

Harry Peifer of Reading has been having great sport with the bass on Tulpehocken Creek, Berks County, this season. Using fly and spinner, he recently caught the 18-inch smallmouth bass which he is shown holding in the accompanying picture. He informs us that on another trip he scored with two smallmouths, 14 and 11 inches in length respectively. Another catch comprised two largemouth bass, one 10 inches and the other 16 inches. The 18-inch bass landed recently weighed 2½ pounds.

"SHOE HORN" BAIT

George Zimmerman, genial secretary of the Lehigh County Fish and Game Protective Association, offers the following proof that anglers are among the most ingenious of people. Writes George:

"Necessity has always been and will continue to be the mother of invention. If you don't believe it, ask Fred Bittner, assistant chief of the Bureau of Sanitary Sewers of Allentown, and get the story first hand. Bittner was fishing in Georgian Bay, Canada, with me early in July, and the favorite lure for great northern pike was a shiny nickel spoon popularly known as the daredevil and purchaseable at any good sporting goods house. But the pike bit so savagely and frequently that the losses of daredevils were extraordinarily heavy, with the result that toward the latter end of the trip, the supply was exhausted. The situation called for some ingenuity, in fact, a lot of it, but Bittner was not to be so easily thwarted in his quest for "Northerns," so what did he do but grab a silver shoe horn that Friend Wife had thrown in his grip just before Friend Husband started on his trip, bore a hole in each end, attach three hooks and resume his fishing. Do pike take to silver shoe horns? Well, the fact that Bittner caught his largest fish, a twelve-pounder, is the answer."

CANOEING INSTRUCTOR LANDS TWO NICE BASS

Jack Kelberg, 17 years old, of Camp Hill, who is canoeist instructor for the Harrisburg Area Boy Scout Council, is developing into quite a plug caster. Recently while casting at Loysville on Sherman's Creek he landed two fine smallmouth bass, reports Norman Wood, Game Commission lecturer. One of the bass measured 17 inches in length, the other 12 inches.

Anglers Gough and Gardner of Washington, D. C., with their catches of Trout taken this year at the Spring Creek project.

FRENCH BEAGLES WIN AT THE MONTGOMERY MEET

With 150 members in attendance, the Montgomery County Fish, Game and Forestry Association enjoyed an unusually successful annual summer outing on the farm of J. Wayne Heebner last month.

Featuring the annual event was a program of sports events which included a dog show, plug casting, tug-of-war, softball, quoits and trapshooting.

J. Hansell French, of Collegeville, Secretary of Agriculture, was the heaviest scorer in the dog show, making a clean sweep in the beagle hound class. B. C. Washington's "Nip" and "Tuck" swept the Gordon setter class. Twenty dogs were benched in the canine show, judged by Harry Steinbach.

In trapshooting, Charles Todd, of Conshohocken, captured the 50-target trophy event, by breaking 49 targets, one better than the 48 cracked by Eugene Muller. Muller who has been scoring well in recent shoots, won the honors in 100-target competition with a 95 tally.

Frank Bertolette scored 24 in the 25-target event in which Judge Harold G. Knight outscored his son, Harold, Jr., 22 to 19.

Leon Nester won the plug-casting contest for accuracy while Harry Fratt won the laurels for distance.

J. Warren Ziegler and C. H. Alderfer won the quoit tournament; the hunters' team, captained by Jim Mullen won the tug-of-war from the fishermens' squad and the hunters' team, led by Lloyd Heebner, won the softball game by a one-side margin.

Judge Knight made the presentation of prizes.

A feature was the playing of Noah's Jolly Germans, a band from Quakertown.

The sport summaries:

DOG SHOW

English Setters

Bitches—W. R. Gordon's "Nannuck."

Dog—Samuel Cope's "Boy."

Irish Setters

Bitches—Harry Walton entry.

Fox Terrier

Martin L. Horn's entry.

Gordon Setter

Dog—B. C. Washington's "Nip."

Bitches—B. C. Washington's "Tuck."

Cocker Spaniel

Entry of John Keyser.

Beagle Hounds

Dog—J. Hansell French's "Delmont Scout."

Puppy male—J. H. French's "Perkiomen Lad."

Puppy bitch—J. H. French's "Perkiomen Lass."

Pointers

Best bitch—C. W. Brendle's "Carolina's Honey Girl."

Best dog—R. T. Schall's "Trigger."

PLUG CASTING

For accuracy—Leon Nester.

For distance—Harry Fratt.

TUG-OF-WAR

Hunter's team captained by Jim Mullen.

WESTMORELAND SPORTSMEN STAGE ANNUAL OUTING

A varied program of events, including a fishing contest in which 25 fishermen competed, featured the fourth annual picnic of the Westmoreland County Sportsmen's Association held in Idlewild Park on August 29. Angler Ray of West Newton scored the catch of the largest bass, an 18-inch fish, in the contest and was awarded a fine casting rod. All of the fish were taken on barbless hooks in the novel contest, and immediately returned to the water unharmed. Bait casting also attracted many of the fishermen present.

Commissioner of Fisheries O. M. Deibler was presented with a plaque at the picnic by President Harry Soles of the Association. In his response, Mr. Deibler spoke commending the interest the sportsmen are taking in their cooperative trout nursery, and said that at the present time there are only eight of these nurseries in the state.

The nail driving contest was one of the most interesting in the sports contests. It took Mrs. Bilby of Derry nine seconds to drive three nails in medium soft wood. She won in the women's contest.

W. L. Campbell, of Latrobe, won the men's nail driving contest. It took him 18 seconds to drive three nails into hard wood using a small hammer.

With the exception of the prone and bench shooting, the baseball game between the Ligonier Merchants and Madison nines, and the awarding of the Trout Nursery cash prizes, the entire program was run through, although some of the events were later in starting than scheduled.

SOFTBALL

Hunter's team captained by Lloyd Heebner.

QUOITS

J. Warren Ziegler and C. H. Alderfer.

TRAPSHOOTING

50-Target Trophy Event

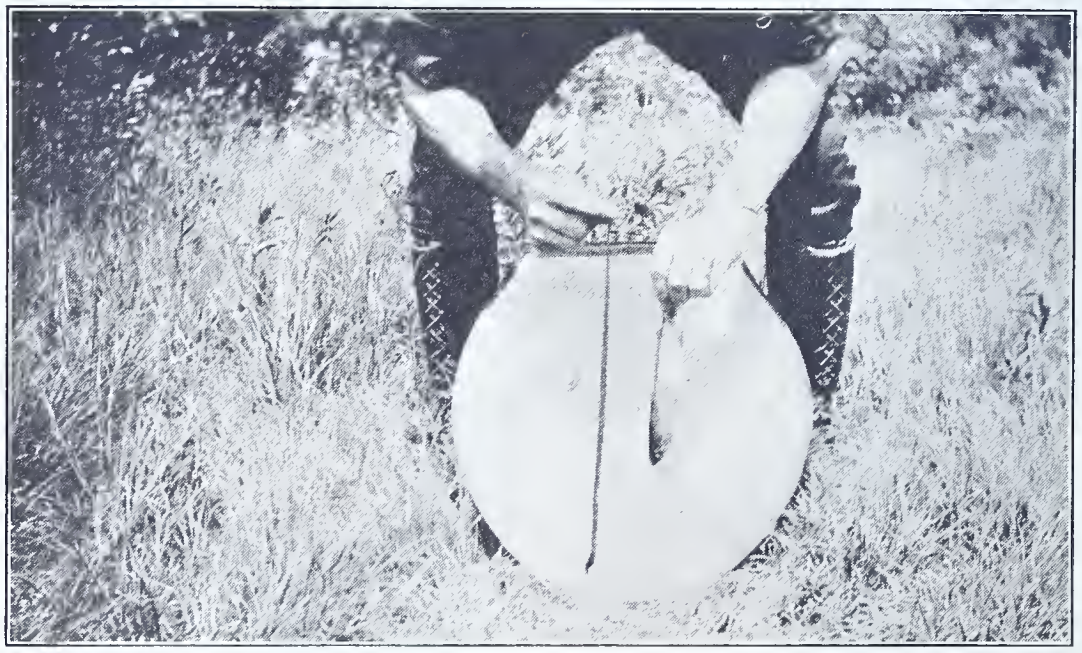
Charles Todd	25	24	49
Eugene Muller	24	24	48
Carroll	23	23	46
Ringler	23	22	45
Gordon	23	21	44
Pursell	22	21	43
Leon Kohl	21	22	43
Ulmer	17	22	39
E. Smith	19	17	36
G. Smith	17	17	34

100-Target Event

Gene Muller 95, Tom Carroll 92, Leon Kohl 90, R. Gill 89.

25-Target Event

F. Bertolette 24, Judge Knight 22, N. Wood 21, N. Washington 21, J. Tunsberger 21, Adolf Muller 20, G. Uhrin 20, N. Weber 20, Harold Knight, Jr. 19, R. Miller 19, R. Tingley 18, V. Harting 18, W. Hannaway 17, Dr. Miller 17, J. Walton 17, F. Romberger 17, J. Seipt 17, F. Brown 17, F. Jenkins 16, J. Over 16, D. Myers 15, J. Hartongue 15, F. Schultz 15, R. Whitaker and H. Jowett 14, R. Middleton 13.



16-INCH SNAKE KILLS 8-INCH TROUT

The following incident which occurred above Cross Fork, Potter County, serves as a good illustration of the destructive tendencies of watersnakes in our trout waters. Warden Wright Rumsey of Roulette writes:

"I am enclosing a picture of a watersnake, and a brown trout that it killed. The background of the picture was too light and the subjects do not show up like I was in hopes they would. But maybe you can get an idea of it.

"The snake was sixteen and one-quarter inches long, and the trout was eight and one-eighth inches long. The trout was not dead when I killed the snake but too far gone to revive.

"When I first saw the trout it had its head under a stone and was turned on its side. I first thought that the trout was dead, but when I got closer to it I found that it was still alive and trying to get away. When I raised the stone which the snake was under, it released the trout and swam off. I followed the snake and shot it. I then returned to the trout and here is the picture.

"This instance may not be of as much interest to you as it was me, as you hear so much about watersnakes. But the thing that impressed me so much was the comparison in size of the two."

CHESTER SPORTSMEN PLAN TWO-DAY RALLY

Fourteen conservation associations of Chester County are combining to stage a two days' sportsmen's rally, Friday and Saturday, October 16 and 17, on the site of the Philadelphia Y. M. C. A. Outing Camp, a mile south of Downingtown. The swimming pools, three of them, will be used for fly and plug casting. The revenue derived from the meet will be used to purchase food for fish and game, to buy direct from the farmers, to purchase game and fish and reforestation in Chester County.

Some of the activities comprise band concerts afternoon and night; pony show, bird dog, beagle and coon trials, archery, quoits, tennis and volley ball matches, rifle, trap and revolver shooting, exhibits from the Fish, Game and Forest and Waters Department, speaking, old-fashioned square dances, etc. Governor George H. Earle and other eminent speakers will attend.

Four years ago the plan suggested itself to Norman M. Wood, who was chosen as president of the Countywide Association. The first meet proved a huge success. This year sportsmen requested that the rally be repeated. Meetings have been held in various sections of the county and much interest is being manifested. John Evans, Avondale, president of the Southern Chester County Izaak Walton League, and Dr. Frank C. Hanna, Oxford, well known bird dog lover and trap shooter, are the vice-presidents; E. G. Henderson, Downingtown, secretary, and John Baldwin, secretary of the gun club at Atglen.

Fly and plug casting on a swimming pool, 40x70 feet, with Hon. Kenneth Reid, member of the Pennsylvania Fish Commission, as judge of the contests, and who will give an exhibition of the art of handling rod and line, will be one of the big features of the great sportsmen's rally and farmers' picnic, Friday and Saturday, October 16 and 17, on the 300 acre farm of the Philadelphia Y. M. C. A., a half mile south of Downingtown.

BERKS WALTONIANS STAGE BIG OUTING

One of southeastern Pennsylvania's feature sports events, the annual field day and sportsmen's picnic of the Berks County Chapter of the Izaak Walton League of America, was held on Sunday, September 20, at the Cedar Top Gun Club grounds near Shillington, Berks County.

Of particular interest to fishermen present was an exhibition of fly and bait casting by Board Member Kenneth A. Reid. Keen competition marked the fly and bait casting events for accuracy and distance. John D. Rothermel scored a clean sweep in winning these events. In spite of cloudy weather and a drizzle of rain, a large turnout of Berks County sportsmen enjoyed the program.

Other listed features of the day included trap shooting, running bear shoot with high power rifles, pistol shoot, archery, bingo and other games.

Stream improvement work on Cherry Creek, Monroe County.

SMALL-MOUTH BASS PUT IN SKIPPACK CREEK

Eighty Quail Released In Different Townships of Montgomery County.

Reports of the game released during the past month was announced at the regular meeting of the Perkiomen Valley Sportsmen's Association, held in the Borough Hall, here, last Thursday evening.

According to Ambrose Gerhart, game warden of this section, he released eighty quail in this county. These quail were ten weeks old and were placed in the following townships: 20 in Limerick; 20 in Worcester; 20 in Uper Providence, and 20 in Perkiomen.

Mr. Gerhart also reported that he trapped numerous pheasants and released them in other sections where this bird is not so plentiful.

He also helped to transfer at least a thousand fish, taken from a stone quarry at Telford, to the Branch Creek. The species included catfish, sunfish and minnows.

Russell Krupp, chairman of the fish committee of this Association, reported that six hundred small-mouth bass averaging between 6 and 7 inches, were placed in the Skippack Creek. There were also sixty-five cans of bass placed in the Perkiomen, averaging about 4 inches, during the past month.

The members of this Association enjoyed four reels of motion pictures after the business meeting, entitled "Fishing Across Canada," through the courtesy of the Canadian National Railways.

CORYDON FISHERMEN MAKE HEAVY CATCHES

George Black, Leo Russell, John Timpano, Mrs. John Timpano, Herbert Williams, Louis Kinney, Charles White, and Francis Rodgers, all of Corydon, Warren county, made fine catches of brook trout on opening day of the season in streams of that section, according to Warden R. C. Bailey, Youngsville.

Elmer Elmquist, residing at Sheffield, Pa., caught a brownie from the South Branch of Tionesta Creek which measured 21 inches in length and weighed 3 pounds dressed.

MUSKIE

Charles Grode of Erie recently scored with the catching of a fine muskellunge in Presque Isle Bay near Erie. The muskie measured 42 inches in length and weighed 17 pounds.

22-INCH PICKEREL

A pickerel measuring 22 inches in length and weighing 2 pounds 9 ounces was taken in Crooked Creek, a small stream in Tioga County in August, reports Leland Cloos, fish warden at Middlebury Center. Gordon Goodwin of Middlebury Center made the catch.

BOARD OF FISH COMMISSIONERS
HARRISBURG, PA.

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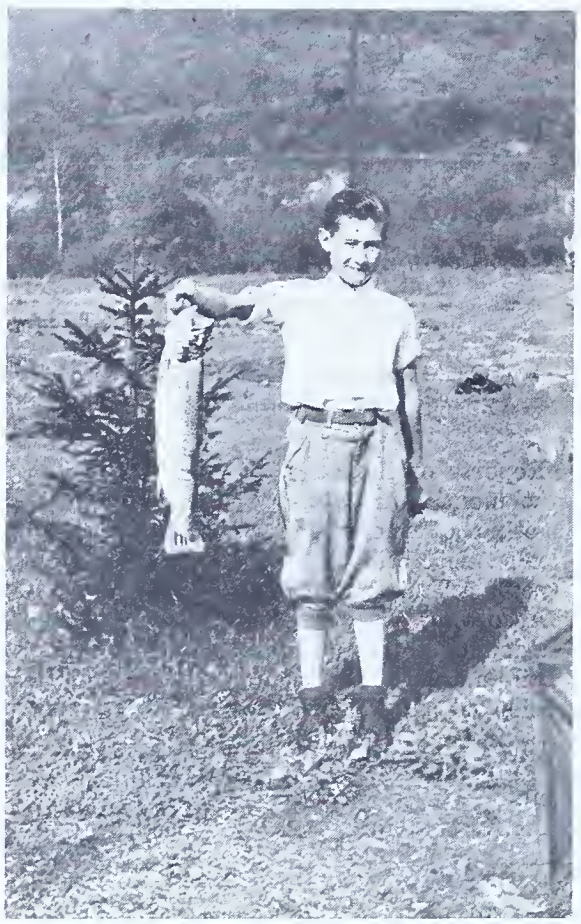
HERE AND THERE IN ANGLERDOM

LaMar Mumbar of Pennsburg, Montgomery county, reports some splendid catches of bass from the Perkiomen Creek this season. He informs us that Charles Nase of Perkiomenville has landed 21 bass so far this season, all from Kratz's Dam at Kratz's Station on the Perkiomen. The fish, ranging in length to 21½ inches, were taken on artificial lures.

Fishing near Duncannon, Perry county, on the Susquehanna River on August 22, William Dean of Harrisburg caught 10 bass, the largest measuring 18½ inches in length and weighing 3½ pounds. His fishing trip came to an end, when he hooked into a giant bass that smashed his rod. Returning to the same place next day, he caught 7 more bass.

Cumberland county fishermen scored heavily on big brook trout during the past season, writes Warden Frank Kirchner of McConnellsburg. Following are some of the catches: F. Herman, Carlisle, 4 brookies, each 14 inches in length; Harry Young, Newville, 15 inch brook trout; Wilbur Getter, Newville, 5 brookies, 14, 15, 15, 12 and 12½ inches; Wilbur Getter, Sr., Newville, 2 brookies, each 15 inches; John Neff, Newville, brook trout, 17 inches; A. F. Frankhouser, Newville, two brookies 15 and 16 inches; Paul Motter, Newville, 16-inch brookie; Paul Thompson, Newville, 15 inch brook trout; Paul Prosser, Newville, two brook trout, 12½ and 13½ inches; Doyle Reed, Newville, 15¾ inch brook trout; Ben Weidler, Carlisle, 14 inch brookie; Leslie Over, Newville, 13 inch brookie; Charles Eby, two, 14 inch; S. Johnson, one 13½ inch; Isaac Johnson, one 15½ inch; William Wagner, two, one 16 and one 18 inches; Rev. P. Curffman, two brookies 16¼ and 14½ inches; Harold Patterson, two 18 inch brookies, and William Chronister, one 14 inches and another 13½ inches. All of the last named anglers are from Newville. Mark Micdella of Carlisle caught a brookie measuring 17½ inches. Six-year-old Harold Keep of Newville was right in the running, taking a brook trout measuring 15½ inches. Speaking of brook trout, its hard to equal this list of catches.

D. B. Fretz of Chambersburg, according to Kirchner, has an excellent claim to the trout fishing championship of Franklin county. Fishing in the Falling Spring, Angler Fretz landed a brown trout measuring 23 inches in length and weighing 4 pounds 3 ounces. A nightcrawler was the bait used.



Harold Bailey, 14, of Emporium, with a 3-pound 9-ounce Brown Trout he caught this year on Portage Creek.

Warden George Cross of Hammersley Fork writes that Game Protector Harry Rickert holds the record for smallmouth bass caught to date this year in Clinton county. The fish measured 19¾ inches in length. Jane Rickert, 7 years old, Mr. Rickert's daughter, caught five legal bass the same morning, the largest bass measuring 12 inches.

Four Clarion anglers made a fine catch of smallmouth bass one evening this season on the upper Allegheny River. Casting plug after dark, they succeeded in landing 24 bass, the largest just verging on 20 inches in length. Comprising the party were Ken Taylor, Bill Geist, Les Weidner and Kenneth Keefer. Taylor caught the largest bass.

Warden Robert Chrisman of Kushequa reports some good catches of brook trout from waters in the McKean section this year. Fishing in Watermill Run, James Burdett of Dayton, scored with 15 on April 27. Watermill is a tributary to the Kinzua Creek. Fred Petruzzi of East Smethport caught 15 on opening day in Cooks Run. Two hours fishing in Fuller Brook, a stream reserved for women anglers, yielded a creel of 15 brook trout to Mrs. John Repine of Bradford. The same stream yielded a catch of 13 on the opening day to Mary Orzechowski of Bradford.

A sucker fisherman, John Werst of Alburtis, caught one of the largest brown trout taken in the Little Lehigh this year. Werst was still-fishing, his favorite sport, with nothing but suckers anticipated, when a violent strike just about ripped his rod into the creek. After a hefty tussle he landed a brown trout weighing 5 pounds 2 ounces. The fish was 26 inches long and had a girth of 11 inches.

The Juniata River in the vicinity of Thompsontown, Juniata county, provided some interesting bass fishing for J. W. M. Burns of Mifflintown. Seven smallmouth bass comprised his catch, the smallest measuring 11½ inches, and the other fish in his creel from 14 to 18½ inches.

Writes Charlie Stambaugh of the Game Commission office, Harrisburg: "Early in the trout season I caught what I thought was an 8-inch brook trout, but which, when I got it home, measured just about 7½ inches (From Trindle Springs, Cumberland county). Being somewhat of an amateur scientist, I like to snoop into things, so I examined carefully the stomach contents of this brook trout. I found in the fish, in addition to a large full-sized earthworm and half another, a small brook trout about 2½ inches long. This fish had been skinned but I base my identification upon the tail, which had the black curved striping similar to the larger fish I was cleaning. Apparently the brown trout are not the only cannibals in the trout family."

A 23-inch pickerel, taken by Frank Stutsman, was found when opened to contain an 8-inch bass.

Fishing on the Upper Delaware has also been good for bass. Ten smallmouths, three of them 15 inches, comprised a day's catch for John Supplee of Milford. The catch was made in two hours.

SNAKE KILLERS

Ira Mellinger, president of the Lancaster County Fish and Game Association, and M. I. Lane, member, are enthusiastic watersnake hunters. One day they tied up traffic on the Eden-Landis Valley road while they killed a nest of watersnakes. Ira tossed them to the road and Lane finished them.

View of Safe Harbor Dam on the Lower Susquehanna River. Excellent Bass and Wall-Eyed Pike water.

Brother Angler—

FOREST FIRES FINISH FISHING

PENNSYLVANIA ANGLER

November is a Great Month for Pickerel Fishing

Vol. 5. No. 11

NOVEMBER
1936

OFFICIAL STATE PUBLICATION

PENNSYLVANIA ANGLER

NOVEMBER, 1936
Vol. 5 No. 11

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ALEX P. SWEIGART, Editor
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Vol. 5. No. 11

PENNSYLVANIA ANGLER

NOVEMBER, 1936

EDITORIAL

Don't Shave in a Box Car!

By KARL E. MUNDT
(Courtesy—Outdoor America)

It's funny how man's environment influences his behavior. Take men riding together in a Pullman car for example and watch them as they move around in the wash room shaving and washing in the morning; if you can consider these exhibits as typical of the cross section of American manhood you might very well conclude that the age of gallant knighthood still flourishes in America and that typical Americans are as polite and considerate as the prize winners in a European contest in etiquette. You will see these fellows begging each other's pardon, speeding up their shaving operations to make way for the next heavy-eyed traveler, cleaning up the lavatory after finishing their shave with all of the fastidiousness of a French chef and, generally, practicing "Pullman car ethics" in royal fashion.

But take these same men in a theater line or a traffic lane and they seem to be men from a different species. They elbow their way along or jerk the line and blare their horns as though they were painted savages crowding in for the first taste of freshly roasted missionary meat. No trace of gallantry or chivalry, now; they practice "box car manners" with all the primal vigor of experienced knights of the rolling stone. They're the same men, but their environment has changed.

Some sportsmen are also disciples of the "ethics of environment." In a meeting of the Izaak Walton League or when afield or astream with a gang of their fellows, they practice a code of sportsmanship and seek a minimum of kill or take which would have made the original American Indian seem to be a game hog by comparison. But—when out in the open alone—sometimes it is a different story! Then the primitive in them exerts itself and everything within range of their gun is likely to fall prey to their destructive impulses.

Which kind of sportsman are you? Do you practice the "ethics of environment?" Do you insist on performing with "Pullman car manners" in a box-car environment?" Or do you need the stimulus of fellow sportsmen to make you play the game according to the rules? The real test of a man's sportsmanship is not his ability to quote passages from "The Complete Angler" nor his collection of membership cards in conservation societies. It is not the loquacity and loudness with which he practices conservation, even, when out with the boys, but it is the degree to which he conforms with the code when he is off by himself with only his dog and his conscience to scrutinize his behavior. If under conditions like those, he hews to the line and "never takes more than is needed," he is a sportsman worthy of the name and a true disciple of Nature.

Somebody has said that man should have a gentlemen's agreement with Nature to put back more than he takes and to leave it as rich as he finds it. This is a splendid code of conduct in the open and all will agree that all should conform with it. And all must also agree that all of us, alas and alack, are not conformists. Sometimes a gentleman in a Pullman car becomes a cad in a traffic lane. Sometimes, too, a gentleman in a crowd becomes a game hog when alone. Fear of rebuke too frequently restrains men from excess instead of fidelity to principle.

The fellow who hunts or fishes with the desire to "get the limit" is only one step better than the fellow who is willing to exceed it. In these days of decreasing opportunities for good hunting and lively fishing, the real Gentleman of Nature hunt or fish with the desire of taking a little and leaving a lot. Not, "How many did you get?" but "How many did you leave?" has become the question which when answered with superlatives indicates that you have been querying a genuine sportsman.

Men who bum rides on the railroads; men who shave in a box-car might be expected to take up to the limit because theirs are not lives of refinement. But men who ride in a Pullman; men who meticulously practice "Pullman car ethics" should be as fine a type of gentlemen in the field by themselves as they are in a washroom with their fellows.

Men know that their children and their children's children will follow them in their desire to enjoy the richness of Nature and they should regulate their activities so as to keep it as rich as they found it. If fish are caught, fingerlings should be planted; if birds are shot, food and shelter should be provided in abundance so that others may nest happily; if streams are polluted, they should be purified; if they are clean, they should be safe-guarded. Gentlemen of Nature will put back more than they take and take only as much as good ethics (not legal limitations) permit.

All of this is old stuff to you and me because we are members of the Izaak Walton League and the whole substance of our objectives is to help rebuild, restore, and perpetuate Nature and her primeval abundance. If all men were gentlemen and treated Nature with chivalry by putting back more than they take, we would need no Izaak Walton League of America. But a short drive down any busy highway will soon convince you that many men are still cads; they resent the fact that others use "their" public highway and they hunt and fish as though they had a solo assignment to feed a CCC camp! And so we need the Izaak Walton League. Easier by far than "making a silk purse out of a sow's ear" is making a gentleman of Nature out of a game hog by securing his membership in the Izaak Walton League.

TROUT STREAM INSECTS

By CHAS. M. WETZEL

PART I

THE year in which man first began studying and imitating natural trout flies is clothed in mystery, and probably antedates the day of Dame Juliana de Berners, whose volume A. D. 1496 is the earliest word in print or writing that we have on the subject. Indeed if we are to omit Aelian's "De Natura Animalium," it proves beyond question that a very primitive art of fly fishing existed in Macedonia in the record century A. D.

In Dame Juliana's "Treatyse," the novice is solemnly instructed in the art of making his own hooks out of needles; to fish for trout and grayling with a line of nine hairs increased for "gret trowt" to twelve hairs, together with a description of the famous jury of flies for trout and grayling. These twelve flies include such familiar names as the donne flye, the stone flye and the drake flye; and no one can doubt but that the majority of them had a prototype — insects probably differing little from those daily encountered on our streams. No allusion, however, is made to the natural flies, but the inference is plain that they existed.

In 1653 Izaak Walton's "Complete Angler," gave the first detailed instructions on fly tying and more or less copied the Dame's "jury of flies." The fifth or last edition of this work, 1676, was accompanied by a second part written by Walton's intimate friend and adopted son, Charles Cotton. In it there appears an elaborate list of flies together with the first information we have on natural insects. The green drake, the stone fly, the black fly and the little yellow mayfly are discussed, but the accounts are rather meagre. Cotton evidently was responsible for them since it is well known that Walton was not a fly fisher.

After the "Compleat Angler" and around the year 1758, there appeared a new work entitled "The Art of Angling Improved," by Richard and Charles Bowlker. This contained the best list of natural flies with their dressings published down to that date.

Then in 1837 followed that great work of Ronalds, "The Fly Fishers' Entomology," wherein the natural and artificial flies were illustrated in color. Ronalds, an old artist and entomologist, etched and colored the plates by hand, and although in his preface he modestly requests, "that the work may be considered and judged of as the labor or amusement of an amateur,"—yet it will forever live in the annals of piscatorial history, as the product of a master angler and engraver.

Ronalds was followed by Theakston, "British Angling Flies" and the "Scientific Angler" by David Foster, 1883. In the latter book, one chapter only is devoted to piscatorial entomology.

The latter part of the nineteenth century was characterized by the writings of F. M. Halford, undoubtedly the world's greatest angler, and one who has probably done more for the advancement of fly fishing than any other. Halford was a pioneer in the use of the dry fly—a strict purist and one who possessed an intimate knowledge of natural insects. He must be given credit for considerable originality but we dare not forget that he had the advantage of works compiled by his predecessors and the technical assistance of the English entomologist and mayfly specialist, Rev. A. E. Eaton. Halford was actuated with an insatiable desire to learn everything connected with aquatic insects, and had both the time and means for gratifying this ambition. Today and through the years to come, his works will stand out as the conscientious accomplishment of a great fisherman.

After Halford appeared G. E. M. Skues, chief exponent of nymphs and immature insect fishing.

We now come to American literature on the subject and it must be confessed that the selection is confined within a very limited range.

First there appears Mary Orvis Marbury's "Favorite Flies." This bulky volume is profusely illustrated in color and gives a historical sketch with each fly pictured. In the forepart of the book, a chapter is devoted to natural insects, the author explaining its briefness with the simple statement—"that in America, the study is not yet sufficiently advanced to warrant more data." The obsolete nomenclature, as adopted by Theakston, was used, i. e., caddis flies were known as duns, etc.

Next in order appears Louis Rhead's "American Trout Stream Insects." Following the old English custom, there appears a plate of flies for each month of the year. Mr. Rhead states, "that the insects were painted from nature and fearing that the text would prove complicated, he deliberately shut himself away from all matters relating to entomology." How regrettable it is that the author was led by his natural enthusiasm into the mistaken notion that such a step would prove advantageous.

Finally there appeared within the past year "A Book of Trout Flies," by P. J. Jennings, the most notable American effort to date. Like Ronalds "Fly Fishers' Entomology," the book is hand colored which accounts for its high price.

Taken as a whole, the above bibliography is rather imposing, yet by far the greater part was contributed by English authors. This must not be construed as a reflection on our ability or intelligence, because the truth of the matter is, that here in America, we have many more species of flies to consider. Eventually we shall get around to naming them all, and when this condition is brought about, the revelation as to the existing similarity between the aquatic flies of England and those of America may prove startling. Whether we like it or not, we are indebted to the English for the names of the majority of our trout flies, and for the aggressive stand she has taken in the classification of stream insects.

And yet in a way, is she so far advanced? Are her angling authorities all entomologists gifted with the ability of reading the wings of insects? Can these same men, who so glibly talk of Baetis Broculata, the pale watery dun, as being over the water—actually point their finger at the fly and convince an entomologist of it being that particular species? I doubt it! Probably it is some other light yellowish mayfly with an entirely different generic name, yet that man might swear to its being Baetis Broculata, the pale watery dun, just because of its color and size. But piscatorially speaking, we must not forget that the man is right, the fly is a pale watery dun, even though genus and species might both prove different. There might be at least a half dozen insects that would fit the angler's description of this fly.

What has been handed down to us from generation to generation, is not the scientific title of these insects, but rather their common angling names such as the green drake, the march brown, the yellow may dun, the pale watery dun, etc., together with a description of their color and size. It has always been that way.

To bring order out of chaos, Ronalds attempted to standardize it by giving the order, family, genus and species of each fly pictured. He was the original pioneer, yet today very few of the insects he etched in copper are known under the scientific names he assigned them. What we have left and treasure are these plates drawn by a master artist, together with the common names given the flies by fishermen in those days. Scientific names are being constantly revived, but pictures, drawn to scale and colored by hand, can never be changed. The remarkable part of it is, that with the exception of the blue dun and a few others, all of the flies so cleverly drawn have their counterparts on our American streams today.

MAYFLIES

The Ephemeridae or Mayflies are commonly observed on our trout streams and are recognized by the majority of anglers. As is well known, they are aquatic insects and appear at times in such swarms that the airlanes are literally crowded. Probably the most amazing part is the unanimity with which these flies in countless myriads spring from the water—a phenomenon all the more remarkable which causes the trout to rise wildly and with an equal vigor. No explanation for this oddity has ever been advanced and we must accept it simply as another of Nature's mysterious workings.

In tracing the life history of this fly, we will start with the naiad or nymph, progressing towards the imago or perfect insect.

Some of the nymphs hide under stones, others bury themselves in the stream bed, while still others wander about freely among the grass and weeds, clinging securely to their supports even in the swiftest water. With its head always upstream, it swims by strokes of its powerful tail, fin and gill covers moved synchronously. Some of the burrowing mayflies, as for instance, Hexagenia Limbata (the "shad fly," as it is known on Central Pennsylvania streams),

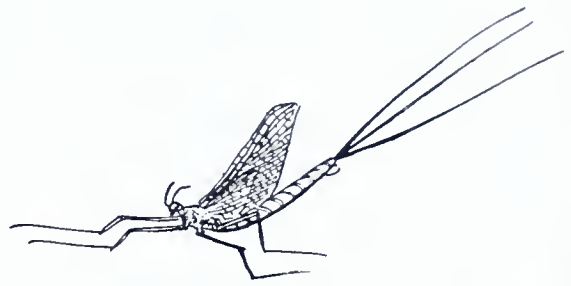
PALE EVENING DUN

PALE WATERY DUN

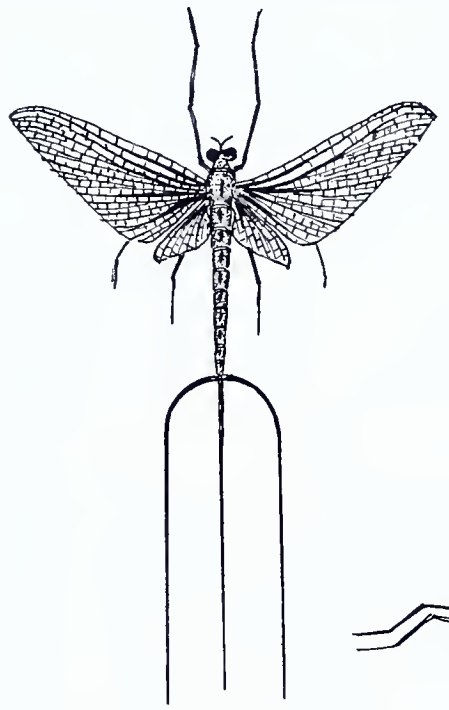
BLUE WINGED OLIVE

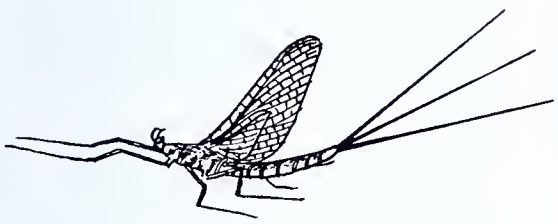
YELLOW MAY

SHAD FLY NYMPH



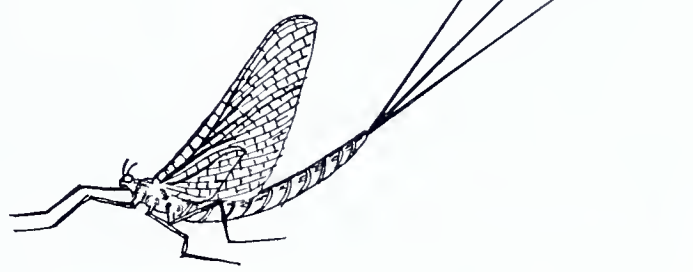
MARCH BROWN



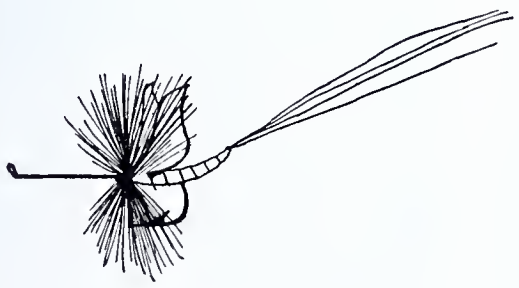


SHAD FLY
♂-MALE

SHAD FLY IN FLIGHT
♀-FEMALE

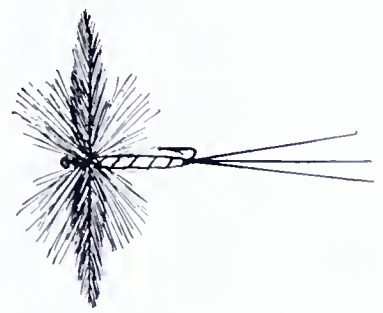


SHAD FLY
♀-FEMALE



MAYFLY
(ARTIFICIAL)

NYMPH
(ARTIFICIAL)



SPENT MAYFLY
(ARTIFICIAL)

Wetzel 9/36.

live for two or three years in this stage; while others like Callebaetis and Caenis (one of the smallest) complete their life cycle in a few weeks, being almost continually over the water during spring and summer.

While undergoing this nymphal stage, their life is in continual danger from the trout which are constantly pursuing them. It is strictly an aquatic insect and its breathing is accomplished by the use of the seven pairs of gills, arranged symmetrically about the back near the sides. Entomologists have in the past differed as to their principal food, but experiments conducted by Dr. Needham on the stomach contents of various nymphs have revealed that they are mainly herbivorous in habit, existing on the leaves of aquatic plants, diatoms, algae and decaying vegetation.

After successive moults, the insect approaches adolescence, a period when wing buds begin to form on the thorax. These are neatly folded and packed in pear-shaped sacks.

As the time approaches to effect its metamorphosis to the winged fly, the nymph rises to the surface and swallows air which is retained by the valve-like structure of the alimentary canal. The mouth parts now seal shut and it partakes of no food for the remainder of its life. Soon while floating near the surface, the nymphal skin under great pressure splits open, and in a few seconds the sub-imago has emerged and flown away. This slit appears on the back or dorsal side of the insect. First, the sub-imago pushes its thorax through this slit; then it draws out its head; next it struggles until its six legs are disengaged and finally it pulls up its abdomen until it has extricated its body, wings, and caudal appendages, clear of the nymphal skin. The entire operation only consumes a few seconds and oft times the fly rests a moment on the cast skin, waiting for its wings to dry before flying away. In angling parlance, it is now known as a dun, and many of our trout flies, like the whirling dun, the pale evening dun, and the pale watery dun, have been copied after the fly in this period.

The sub-imago can be recognized by its duller coloration and by the possession of small hairs around the wing borders. The male sex is determined by the presence of a pair of claspers shaped like calipers on the ventral or underside of the abdomen at the caudal end. These claspers are not present on the female.

At first the insect flies slowly, its wings being still weak, resting often on the surface of the water, especially in the larger pools; and it is in these frequent rest periods that it is eagerly preyed upon by the trout.

Mayflies are easily distinguished from all other insects by their peculiar upturned body, which consists of ten segments tapering to the end and terminating in three setae or tail whisks—sometimes two. They are equipped with two pairs of wings, the hind pair very small and approximately one-third the length of the first pair on the mesothorax. Sometimes the hind pair is lacking, like in little Caenis, which has a wing spread of approximately eight millimeters, roughly corresponding to one-third of an inch. In general, the wings are transparent, have a great number of veins and cross veins with numerous intercalaries, all of which make the taxanomic study a matter of great difficulty.

The sub-imago lasts but a few minutes in some and about a day with the majority. It is usually spent inactively, the fly sitting with wings stiffly erect among the willows and with its fore feet extended forward like a pair of feelers or antennae. After this, the fly undergoes its second metamorphosis, casting away another skin which envelops it, wings and all. This is a peculiarity of the mayfly, the only known insect that undergoes a moult after it assumes the winged stage. Fishermen now know it as a spinner and again we can name such artificial flies as the red spinner, golden spinner, etc., as having been copied after the fly in this period.

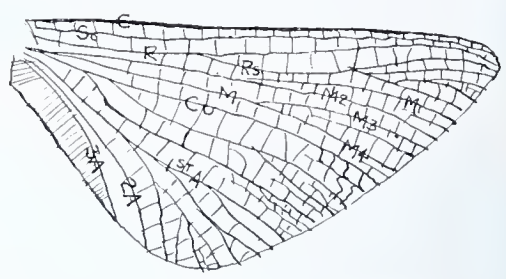
Now in the imago stage, the fly becomes an animated creature; the body sutures are more pronounced, the wings lose their pubescence, become sparkling, and the body color changes sometimes to an entirely different hue. No longer does it falter in its flight, but moves out over the water on swift sure wings as if radiating joy in its existence.

Copulation occurs in mid-air, the male lowermost. Darting at his mate from below and clasping her thorax with his elongated fore tarsi, he bends his body forward over his back and grasps with his forceps the hinder part of her abdomen. Meanwhile, the couple gradually sink—the female not being quite able to support herself and mate—and by the time they reach the ground, if not before, their connection is terminated. Immediately after the act of coition the male flies away to resume his interrupted gambols, and the female after resting a short time, repairs to the water to lay her eggs.

While ovipositing, she may be seen rising and falling over the water, dipping down and touching the tip of her abdomen to the surface; this action washes off the eggs that are being extruded from the paired oviducts (This habit of rising and falling is not strictly a female trait, for oft times a group of males congregate and indulge in a similar amorous dance over the water). Other females may discharge the contents of their ovaries in a mass; these two egg clusters layed upon the water rapidly disintegrate and the eggs sink broadcast on the stream bed. There are still others that crawl beneath the surface of the water and deposit their eggs on any convenient support.

After ovipositing, the final cycle in its life is completed. Spent and unable to rise from the water it soon dies, floating downstream, either to be seized by the trout or washed ashore by the waves. In this downstream journey it lies inert on the water, its wings usually in an outstretched horizontal plane, which position we copy in our spent wing flies.

And now a word as to the insects illustrated in the sketch. The pictures are drawn to full scale and although it is impossible to portray them in color, I will attempt a description so that anglers who meet them on the streams can identify them.



Wing of Hexagenia Limbata

The pale evening dun Cleon Vicina is a small whitish yellow fly and resembles the pale watery dun very much in its general makeup. Wings, colorless; legs and setae, whitish; body, yellowish white.

The pale watery duns Baetis Bioculata and Centroptilum Luteolum are somewhat larger than the pale evening dun and are the identical flies that Halford imitated so successfully in England. Since these flies have been identified and classified in both countries, there appears to be no question as to their authenticity. Wings, very faintly green tinted, sometimes tinged with pale yellow; legs and setae, whitish; body, glossy, with a pale yellow tint underneath and with brown above.

The blue winged olive Ephemerella Bispina is very similar to the English blue winged olive E. Ignata. Wings, black grey; legs and setae, brownish green; body, pale brown varied with olive green.

The yellow May duns, Heptagenia Flavescens and Heptagenia Interpunctata have been noticed by all trout fishermen. Wings, transparent, clouded with yellow; legs and setae pale greenish yellow; body, pale greenish yellow.

The March brown Siphlonurus Alternatus is quite a large fly and Ronalds called it the dun drake, since it appears to be the dividing line in size, that distinguishes the drakes from the duns. Wings, glossy with pitch brown veins; legs and setae, brown; body, light brown underneath, dark brown above.

The shad fly Hexagenia Limbata is one of our largest mayflies and appears on Penn's Creek around the thirtieth of May. I have encountered these large flies in various localities, once near Dorset, Ontario, in the Lake of Bays region, where they swarmed in untold numbers and numerous times on our Pennsylvania streams. It is really the green drake, but throughout Pennsylvania it is known as the shad fly. The editor of the ANGLER informs me that this insect also appears on Spring Creek and he has checked the date of its emergence very closely to its appearance on Penn's Creek. Wings, transparent faintly tinted with greenish yellow; legs and setae, brown, sometimes whitish yellow; body, varying from light yellowish green to light brown beneath, but darker on the dorsal side. For those having a penchant for entomology, I have sketched the fore wing of H. Limbata and have designated thereon the principal veins of taxanomic interest. C=Costa; Sc=sub costa; R=radius; M=median; Cu=cubital; 1st A, 2 A and 3 A=the first, second and third anal.

Strike Blow at Pollution of Brandywine Creek

By GEORGE H. STRALEY,
Daily Local News, West Chester

The Friends of the Brandywine dealt a body-blow to Pollution, Chester county's Public Health Enemy yesterday.

In an all-day conference, held at the New Century Club, here, the organization of prominent men and women who are dedicated to the task of purifying and beautifying this county's most historic and picturesque stream of water, threshed out major problems in connection with their objective.

They listened to an imposing array of sanitary water engineers, Department of Health experts, and conservationists, and brought their clinic to a close with the adoption of a set of seven resolutions which are regarded as an opening gun fired in a campaign destined to culminate successfully.

Out of the maze of discussion which took place at the morning, afternoon and evening sessions of the conference, one fact stood out in stark relief: No form nor source of pollution exists anywhere on the watershed of Brandywine creek that cannot be successfully coped with by modern engineers. And since deliberate stream pollution is illegal, and engineering genius can solve the problem, the Friends of the Brandywine find themselves confronted chiefly with the task of educating the general public and stirring up the legislators of the State to a point where proper enforcement of law will be forthcoming.

Ladner Forceful

The analysis of the situation was forcibly brought out by the Honorable Grover C. Ladner, of the Pennsylvania Department of Justice, who delivered the chief address of the conference at the evening banquet session, when he spoke to an audience of 175 men and women on the subject, "Legislative Control of Pollution."

Mr. Ladner minced no words in his charge that "pollution of water is an indictable offense when it affects the public," and that "he who pollutes water is a law-breaker." A veteran of fifteen years in the fight against pollution of Pennsylvania's streams and rivers, Mr. Ladner quoted the various legal enactments which forbid pollution, including the Fish Penalty Acts, and the general law relating to nuisances. Because these measures have never been properly enforced, he pointed out that organizations such as the Friends of the Brandywine are needed to energize public sentiment.

He urged members of the organization to contact candidates for the State Legislature, and outline their desires in no uncertain terms.

Many Streams Polluted

"Years ago," Mr. Ladner said, "stream pollution in Pennsylvania was no problem because it did not exist to a dangerous extent. Now, however, our rivers cannot absorb the waste that is dumped into them, and pollution has spread to such an extent that out of about 100,000 streams in this State, 85,000 are polluted."

Mr. Ladner declared that the protection and redemption of these streams should be the duty of local communities, and not the entire responsibility of a small board at Harrisburg. "Local communities ought to have power to bring their law actions in the name of the Commonwealth when they wish to abate pollution," he said. "Crime is kept down because of the multiplicity of police enforcement agencies, yet we try to fight pollution with a small Sanitary Water Board and a few engineers."

Reviewing some of the attempts that have been made in the past to clear up the streams Mr. Ladner mentioned the Pure Streams bill introduced by Senator Thompson, Republican, Westmoreland. This bill, he said, was sent back to committee after its second reading, and he reminded the audience that "your own Senator Clark was one of those who voted to kill it."

Industry an Offender

Industrial plants that dump waste water into streams are the chief offenders of the anti-pollution laws, Mr. Ladner pointed out. Although he admitted that these industrial plants undoubtedly have a real problem on their hands in the matter of waste disposal, he stated that the problem is essentially their own, to be solved by their own experts. Carelessness, rather than deliberate action, lies behind industry's pollution of the streams, Mr. Ladner thinks, but the result is the same, and he feels that pressure should be brought to bear on offenders who are not cooperating in anti-pollution campaigns.

"There is nothing fair in punishing the fellow who catches fish out of season, or who takes more than his limit, with a $10 fine, while industry empties its vats of waste into the same stream and kills fish by the thousands, and goes unpunished," Ladner said.

"The paper mills at Downingtown have been polluting the Brandywine for a long time. I am glad that you have commended two of these mills that are cooperating—(referring to a resolution adopted earlier in the day)—and as for the others that are not cooperating, leave them to me! They'll go along, or else ——. There is no preferred list with the Sanitary Water Board," Ladner said.

Health Considered

Presenting the problem from the public health angle, the speaker reminded his listeners that "water unfit for fish is unfit for human consumption."

"Doctors, if they tell you the truth, will say that they have their doubts about the chemicals that are being used to make polluted water fit to drink, these days," Mr. Ladner said. "The city of Philadelphia, which gets its water from the Delaware River and the Schuylkill, has a very high cancer death rate. Camden, just across the river, has a cancer death rate one-third lower. Both cities breathe the same air, and eat the same food. The difference is in the water. Camden gets its water from pure artesian wells."

Mr. Ladner was introduced by Roland S. Grubb, Kennett Square and West Chester attorney, who is president of the Friends of the Brandywine. Mr. Grubb also introduced the only other speaker of the evening, Edgar C. Nicholson, a member of the State Fish Commission, who told of some personal experiences in helping to clean up the Wissahickon stream in Philadelphia, a task comparable to that of cleaning up the Brandywine.

MacElree Toastmaster

W. W. MacElree, local attorney, was toastmaster at the banquet, which was held in the basement of the New Century Club House. Music was provided during the meal by Christian C. Sanderson's orchestra, and vocal selections were rendered by two local soloists, Mrs. Fred A. Dutt and Miss Martha Fackler. Mrs. Dutt sang, "Indian Dawn" and "The Trout," and Miss Fackler offered "To a Hilltop" and "Little Yeller Dog." Piano accompaniment was by Miss M. Ruth Thomas. John Russell Hayes, generally recognized as the poet-laureate of Chester county, recited his well-known poem, "The Brandywine."

The day-long conference of the Friends of the Brandywine opened yesterday morning at 10 o'clock, at which time O. M. Deibler, State Commissioner of Fisheries, and other prominent conservationists, spoke.

In the afternoon session, starting at 2 o'clock, addresses were given by Harry M. Freeburn, District Sanitary Engineer of the State Department of Health; Christian C. Seibert, executive engineer of the Sanitary Water Board, and W. M. Shoemaker, chairman of the Management Division of the Technical Association of the Pulp and Paper Institute.

Talk of Sewage

Mr. Freeburn, in his talk on "Treatment of Municipal Wastes in Brandywine Watershed," told what progress has been made in Chester county along the line of municipal sewage disposal, pointing out that only one sizeable community, Honey Brook, is without a sewage treatment plant. He mentioned the effective plants operating in Downingtown, Parkesburg, Coatesville, West Chester and other places, incidentally calling to mind the fact that West Chester residents had originally registered bitter opposition to construction of its plant.

Engineer Speaks

Mr. Seibert, speaking on "Engineering Control of Pollution," told of the extent to which polluted streams can be made safe by modern engineering methods, at the same time expressing the statement that it is "practically impossible" to completely treat municipal wastes.

"Sunlight, aeration, plant life, and other forces of nature are taking care of some of the waste in streams," Seibert said, "but if these forces are overburdened, man must make up the difference. The margin between the assimilating power of the stream and the load it has to carry is what must be considered," he stated.

Difficult Situation

Mr. Seibert pointed out that it is impossible for an industrial plant to return the water it uses, from a stream, in the

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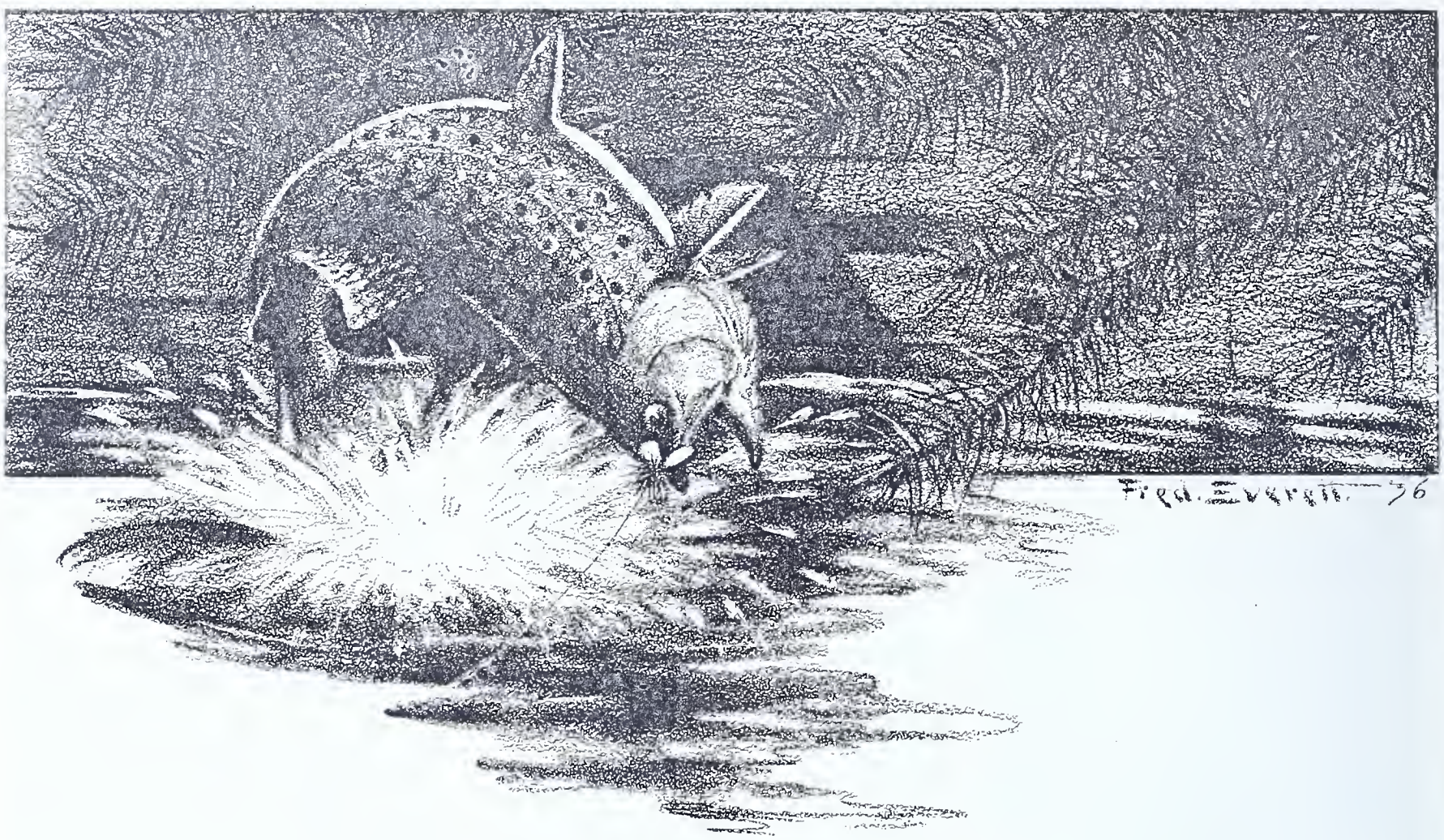

In May and June, Anybody Can Catch Trout on Most Any Old Fly

THE OLD TIME RELIGION

By FRED EVERETT

It was good enough for father
And it's good enough for me.

MANY times in the last few months these words from the famous old song have come into my mind. Not because of religious fervor, that is, unless you call fishing a religion to a guy like me, but more from certain experiences that have been constantly recurring to me as I have been traveling through this eastern section of the country, giving talks at sportsmen's meetings and discussing fishing and fishing methods with a vast army of devotees of the rod.

It came as a decided surprise and yes, "shock" to me to realize that only a comparatively small number of the sportsmen keep abreast with the evolution in fishing theories and methods and that the big majority are content with what was good enough for father. It is possible that they have had no way of learning about what is new in Izaak Waltondom it is also possible that some wouldn't change if they did know.

At first I thought I was being kidded when I mentioned 12-ft. leaders and received a dubious look for answer; and when I said 16- or 18-foot leaders it was hinted that I wait and let them tell one. Or when I showed a heavy reel with an HDH line for use on a 3½-oz. rod, they edged away from me to look for a safe retreat in case I became violent, humoring me in the meantime as is always advised when suddenly brought into close contact with one who is mentally unbalanced.

Maybe I am, but, if so, I am having such a heck of a good time that I hope I'm incurable. Of course, I have an alibi—who ever saw a fisherman that didn't—because I number among my friends some of the best exponents of modern fishing and they have been a bad influence in my angling life.

It is not my intention to tell of all the newest trout fishing methods because, frankly, I don't know them all and if I did, it would be poor policy to tell. Most people like to discover things for themselves; there is much more kick to it. What I have in mind is to mention a few of the most radical of the new ideas and their application to present day trout fishing, especially during the latter half of our season.

There really is no need for many tricks either old or new during May and early June. Anybody can catch trout on most any old fly during the time of the big hatches. If you don't believe this, do as I have so often done at such times, try out as many sizes and patterns of flies as you can in one day and see if you can find one that the fish won't take if properly offered them.

The trick is to find one they will refuse rather than one they will take. In a morning's fishing I have changed to as many as a dozen different flies ranging from large, size 10 fanwings down to small 16's, all of different colors and patterns, and caught trout on every one. These flies included fanwings, double wings, spent wings, split wings, bi-visibles and spiders.

But after the middle of June rolls around, the trout are all fed up and then it becomes a job to find the fly they will take and just how they want it presented. Then all over the streams where one finds the old time religion fisherman, the cry goes up that the fishing is over for the year.

It is, for them, but it really is just beginning for those who have kept abreast of the times. That is the time when it becomes an art to fill a creel and the real joy of trout fishing is to be experienced. To fool one of those old big babies in the quiet, crystal clear pools is a thrill never to be had in May. To pick out an old lunger from some unexpected retreat in an out-of-the-way spot is a reward to be cherished. And believe me, you deserve it, too!

It was only a few years ago that the first pioneering was done on the late season fishing. E. R. Hewitt carried on experiments on his own streams while Victor Coty was testing out similar discoveries on such open waters as the Ausable in upper New York. While the mass of the anglers were going along in the same old way, using 7½-ft. leaders and size 10 and 12 flies, Coty was lengthening his leader and using smaller and smaller flies for this stillwater fishing.

Other wide-awake, progressive fishermen also took up these experiments with sur-

prisingly successful results. A mighty fine example of the value of this new style of fishing happened last season. I was talking to Burr Sherwood, a member of the Beaverkill Trout Club and he gave me a member's version of a story that I had already heard first-hand from my friend who did the fishing.

It seems that for some two weeks practically no fish had been taken at the Club. It was in July, the Beaverkill, low and clear. My friend, Ray Bergman, went to the Club as a guest and was informed that it was useless to fish as the trout simply would not rise to the fly. In spite of these conditions, and to the amazement of the members, Ray started in taking fish after fish. All of good size.

Even as he told me, Sherwood seemed incredulous. It just couldn't be done—but it was. Not that it was easy; it was darned hard work, carefully and skillfully done, but it showed that it could be done if one would turn from the old time fishing religion and accept some of the new doctrines. I have seen beautiful pictures of Coty taking 3 and 4 pound trout out of the still waters and I have personally used the new doctrines on the Beaverkill and other streams with success such as I have never had before.

In order to discuss this new fishing method, let's start at the fly and work back to the angler. For years we have been using the same flies with only a change in pattern or size to vary our offerings. It may be that the trout have, through the years, built up an instinctive, protective reaction against them, for they surely do not take them so freely as in days of old. It is a common practice to use big flies on big waters and it is hard to persuade most anglers that smaller flies are more effective —the smaller the better.

Only the other day I was talking to Dewey Borden, President of the Sportsmen's Association at Liberty, N. Y. He is a mighty fine fisherman who takes his share of big trout out of the lower, heavy waters of the Beaverkill. He claims that the only way he does it is with small flies, even as small as a 20. I know his box contains very few flies larger than 14's. Victor Coty has special flies tied, using the smallest size that will hold the large trout he hooks, a 14 hook with hackle the size for a 16 fly.

There are other changes than size, however. Last year I had the pleasure of helping in the tests of a new type of fly—one with a body that had more life because it was tied with materials that gave off a glitter. Various materials were used, such as horsehair, gold or silver and last and best, a new transparent material in different colors, which gave a fine imitation of the insect's body.

These new flies had a magical effect on the trout and took many fish where the regulation flies could not raise a single one. I believe the added lifelike glitter of the body had a great deal to do with this. Certainly when placed beside the old style fly, the new ones stand out with surprisingly more life.

There is another big advantage in these flies and that is the ease with which they can be kept dry and fishable. Since their bodies are solids (and lighter than water) they do not soak up water and there is none left on the bodies to keep the hackles wet. A couple of false casts will dry your fly and it is ready for work even after fighting and landing a fish. A new nymph made of this transparent material is so deadly a lure all season long that I only hope too many anglers will never become proficient in its use. If there is such a thing as having a lure too good, this nymph is it.

The proper fly is only a small part of this new fishing and the easiest to acquire. Next comes the leader. Here is a radical change already suggested. It's a far cry from 7½ feet to 18 feet and one which nearly every angler says he can't handle. It is not half so bad as one imagines if the proper equipment is used and a few simple facts learned.

Many argue that long leaders are not needed but actual experiment proves their value. Every one knows how hard it is to cast over trout in clear water without scaring them. Many a time have I had a fine specimen race off upstream after what I considered a well-delivered cast had landed. The line is one of the big factors in frightening trout. The further from the trout it lands on the water, the better are one's chances of success.

Another factor in scaring the trout is the reflection of light from the leader, especially the heavier strands. The finer the gut, the less chance it has of flashing enough light to frighten the fish. Leaders which are dull and will not reflect the flash of the sun are invaluable aids in this new fishing. The long, fine leader is coming into favor and it is up to all of us to recognize this fact and make use of it for better fishing and a longer period of success during the season.

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"To Pick Out an Old Lunger from Some Unexpected Retreat in an Out-of-the-Way Spot is a Reward to be Cherished"

EARLY FISH HATCHERIES IN PENNSYLVANIA

By ALEX P. SWEIGART

Shad Gill Nets at Night on the Delaware

MARRED by a slaughter of fish and game unparalleled in American history, the waning years of the nineteenth century served to impress in the public mind a vital need for conservation of our wild life resources. This was the era of the market hunter and the market fisherman, a period in Pennsylvania when the supply of fish and game was generally believed inexhaustible. Market stalls in Philadelphia and other eastern cities were glutted with furred and feathered game, including the now extinct passenger pigeon, and fresh water species of fish life.

On the Susquehanna and Juniata Rivers and the Delaware, market fishermen plied an active trade with net, spear, and fish basket. Under this intensive system of commercial fishing, even the vast quantities of fish life in Pennsylvania waters showed an alarming decrease. Gradually public sentiment crystallized to the realization that drastic measures to reduce the kill would be necessary, and in 1866, the Fish Commission was created by an Act of Assembly. This first act provided for only one Commissioner to be appointed by the Governor to fill the office. In 1873 the body was reorganized, the number of Commissioners being increased to three. Six years later, three more members were added, the Commission thereafter comprising six members until it was reorganized in June, 1903, into the Department of Fisheries.

During its early years of existence, the Commission had a difficult time in enforcing the fish laws and in other phases of its work. Following is an interesting excerpt from the report of the State Commissioners of Fisheries for 1881:

"These (kiddles or fish-baskets)", the report declares, "as we have shown before, are forbidden in Magna Charta. They were put down with the strong hand by the people in the time of King John, and we believe have never since been allowed in any part of the British Islands. The law in respect to them must be strengthened; they must be declared nuisances and destroyed wherever seen.

"It is due to the Pennsylvania raparians of the Susquehanna that they should be abolished in Maryland, for there is no greater enemy of anadromous fishes than just these vile death-traps. What they cannot take or use for their owners they destroy, so that others cannot use them, and millions upon millions of small fish are caught in them annually, only to be shoveled out into the current—putrid and useless for any conceivable purpose—manure, perhaps, only excepted. * * * * Fishing associations have recently been springing up all through the country, and laboring to bring back to our streams their wonted supplies of whole-

Pennsylvania Fish Commission Car

some and cheap food. Let these direct their attention to the fishery laws, so that fair play may * * * * be exhibited."

Splendid support to the early work of the Commission was given by newspapers throughout the state. The following comment appeared in the report of the State Commissioner of Fisheries for 1896:

"Undoubtedly the trend of public sentiment in favor of the work of the Fish Commissioners has been materially assisted by the influential newspapers of the state. These have performed yeoman service in the support and extension of fish culture and fish protection, and to them the Commissioners desire to express their appreciation of the extent to which this valuable and welcome assistance was given."

Again, from the same report:

"The general looseness of many of the fish laws are a source of great anxiety to the Commissioners for they assist in counteracting the benefits of their work. As many of the laws stand, it is only with great difficulty that convictions for illegal fishing can be secured, and with still greater difficulty can adequate punishment be meted out to offenders. In most of the laws governing or protecting fishes, the measure of punishment is largely discretionary with the officials before whom the offender is haled, instead of mandatory as it should be. In other acts the wording is so obscure or loosely worded that they are practically inoperative. Again, there are existing evils for which there are at present either no laws at all, or where they do exist, the penalties are so absurdly light as to have absolutely no deterrent effect."

Under conditions such as these, the foundations for Pennsylvania's system of fish conservation, as we know it today, were laid. Handicapped by lack of funds (which had to be appropriated by the Legislature) the growth of the hatchery system was extremely slow during the nineteenth century.

Trout Ponds — Eastern Hatchery

Early Fish Hatcheries

First of the state fish hatcheries to be established was the Marietta hatchery, located about two miles from Marietta, Lancaster County, on a spring known as the Hoover Spring, one of the group of famous Donegal Springs. By 1873, this trout hatchery was in operation. It comprised one acre of ground, purchased with the option to use as much of the water as was believed necessary. Cost of the property was $2,000. Later, insufficient water was one of the major causes in abandoning this hatchery.

Another hatchery, well known during the 'nineties was the Eastern Hatchery, located on the Little Lehigh River, about four miles above the city of Allentown. Virtually all of the trout waters in eastern Pennsylvania were dependent upon the trout fry produced at this hatchery, which was established in 1876. From it, the mountain brooks of the Poconos, streams of the Blue Ridge mountain range, and low temperature tributaries of the Lehigh, Schuylkill, Juniata and middle Susquehanna rivers received their trout for stocking. Under the capable management of John P. Creveling, this hatching station increased its capacity for output to the utmost by 1894. The Allentown hatchery was established at the present site of the Trexler Trout Hatchery, important commercial trout hatchery today.

That lack of sufficient funds for propagation of fish was a major drawback in development of the hatcheries is evident from the following comments concerning the

Western Hatchery — Corry

Eastern Hatchery, which appeared in the report of the Board for 1896.

"There are two buildings used in the work of rearing trout, one of which is used as a nursery or holding house for the young trout from the time they have absorbed their sacs to the period when they are ready for shipment to applicants. The station is admirably located, unfortunately it is located on leased land, and it is therefore undesirable to make any permanent improvements thereon. The two hatching houses are in a deplorable condition. On one occasion last winter after a heavy snowfall, the weight of the snow crushed in part of the roof of one of the buildings, and broke several rafters. The structure was temporarily repaired at the time and is now undergoing further patching. The other building is, if anything, in worse shape. The rear wall is fully four inches out of plumb, and has had to be shored up from the outside and strengthened by braces on the interior. If the State owned this property, permanent improvements could be undertaken and the work of the commission greatly enlarged."

The Western Station

The Western Station, located near Corry in Erie County, was established about 1875. It was one of the two hatcheries of the commissioners at which the work of hatching salmonoid fishes was carried on. The lot owned by the State was source to several large springs. Containing 84 hatching troughs which, when run at full capacity could accommodate about 1,500,000 brook trout fry, the hatching house, according to an early report of the Board, was a plain structure "admirably designed for the work."

"This is less than one-half the number which is demanded annually from the Corry hatchery for stocking the southern tier of the State, but it is the limit which can be turned out. Indeed it is seldom that as many as a million and half fry can be accommodated. This number can only be turned out when the winters are mild enough to permit the early shipment of fish."

On the grounds at Corry in 1896 were 31 ponds, used for retaining and caring for the brood trout, and for the temporary storage of warm water species of fish taken from Lake Erie for distribution to applicants in all sections of the State. William Buller was at that time in charge at Corry. First of the superintendents at this hatchery, which today is one of the most important trout producing units in the State, was Seth Weeks, from whom the property was purchased and who, prior to the time of purchase, conducted a small commercial trout hatchery at the site.

Concerning the establishment of the Western Station at Corry, the following interesting lines are taken from an early report of the Board:

"It was particularly well situated; its area was a little more than nine acres embraced in a compact oblong form. Smith street, a thoroughfare extending to it from Corry, divided the property in two parts, one of which, the lower, is heavily wooded, chiefly with white pine, one of the most graceful of American evergreens. About two miles from the center of Corry, nearly the whole area of the lot is gemmed with springs of delicious water, but as the property has a gently inclined surface, except on one portion, there was no extra dampness or moisture. The streams which run from the springs flow over heavy blue clay; thus the water, though clear as crystal, appears dark by reflection, a color rarely seen in spring water. So intense, indeed, is this reflection, that, except on very sunny days, the bottoms of the trout ponds cannot be seen. But murky though the waters appear, they are for the entire year of a singularly even temperature, varying scarcely a degree in winter or summer, and fishes of all kinds seem to grow rapidly and thrive, for at the present time there are brook trout in the ponds which, for size, are more like shad.

"Besides the springs and woods a pond or two graced the grounds and there were also a very comfortable dwelling house and a large barn. This barn was an ancient edifice, and had been at one time a primitive sawmill, one of the very first in that section of the country. The timbers in it are of enormous strength and look as though they would last a thousand years.

Erie Hatchery

"For the purchase of the property the Legislature appropriated $2,000, and for its immediate improvement $3,000. With a portion of this latter money a first class hatching house was erected. It was sixty feet long by thirty feet wide, and contained troughs of the most approved pattern, and much better adapted to the purpose for which they were intended on account of the magnificent supply of water of the most uniform flow. The new acquisition was named the Western Hatchery on account of its being on the Pacific Ocean side of the Allegheny mountains, and Mr. Weeks, the former owner, was made superintendent. During the first year, there were hatched and distributed from this new hatchery one hundred and fifty-four thousand brook trout (fry) and eighteen thousand five hundred salmon trout (fry). Besides these there was planted in the ponds on the grounds three thousand adult brook trout, and two hundred and fifty salmon trout.

Eastern Hatchery — Allentown

"Soon after Colonel Gay became one of the Fish Commissioners, Mr. Weeks resigned his position of superintendent. But there was no difficulty in filling his place. For some time Colonel Gay had been observing the work of Mr. William Buller, Mr. Creveling's assistant (at the Allentown hatchery), and it was characterized by so much intelligence and faithfulness that he was at once offered the vacant position. * * * * The appropriation for improvement had not gone very far beyond the erection of a hatching house, and like necessary matters, so that when Mr. Buller arrived at Corry to take charge it seemed like an endless task to make an orderly place of it.

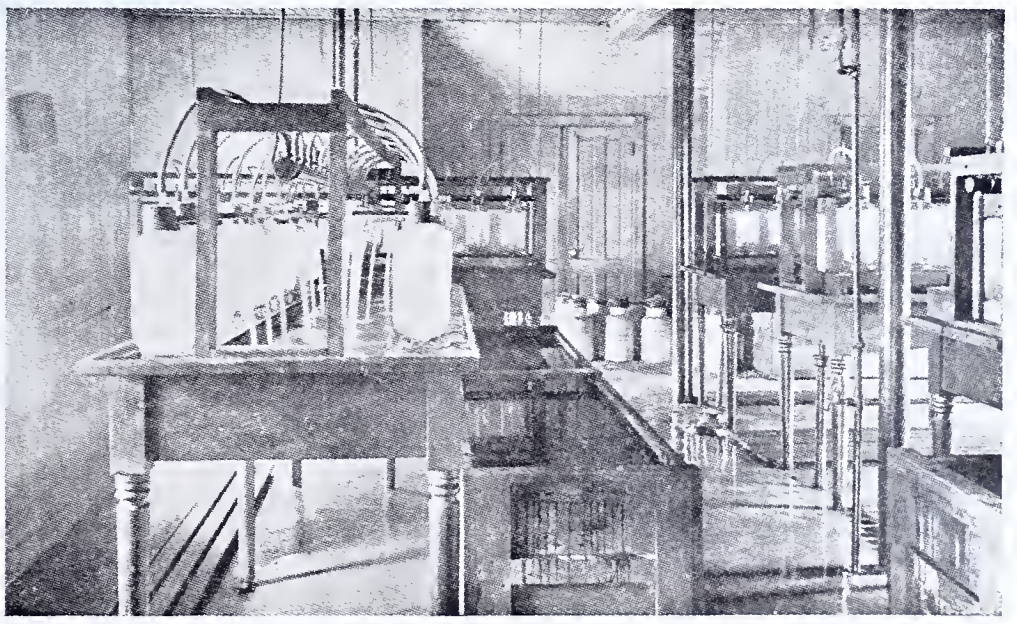
"Colonel Gay accompanied Mr. Buller to the hatchery and the two, undismayed by the Augean stable-like appearance of the place, went each manfully to work. They labored early and late. The fallen timber and underbrush and tangled vines were cleared away, the overplus of trees cut down to give the rest room to spread, the marsh was drained, logs and stumps taken from the ponds, and the place generally put in ship-shape condition, and a new office and sleeping room was built. Eight additional ponds were constructed, a handsome carriage drive built, a number of winding gravel walks laid out, a good portion of the property sodded, some fountains erected, two or three rustic bridges thrown across the streams and ravine, and the whole place given a park-like appearance, all at a trifling cost, for being deeply interested in his work, everything was done either by Mr. Buller himself or under his direct supervision, and the State, as a result, received all the benefit.

"So attractive was the place made that it speedily became a resort for the people of Corry."

The Erie Hatchery

In the early days of fish culture in Pennsylvania, the Board was extremely proud of the Erie hatchery, declared to be "from an architectural standpoint * * * * the handsomest of the stations under the control of the Pennsylvania Board of Fish Commissioners."

This hatchery, a story and half frame building, fronted thirty feet on Sassafras street and about fifty feet on Second street in the city of Erie. It was observed in an early report that "from the outside there is nothing to indicate the character of the work carried on within except perhaps it is a weather vane, cut in the form of a fish which surmounts the roof. Indeed the lines of the structure are so drawn that they give the impression that it is rather the residence of a man of more than moderate means than a place in which to incubate fish eggs."



Erie Hatchery — Interior View

It was to the Erie station that eggs of the white fish and lake herring from Lake Erie were taken and hatched. Eggs of the wall-eyed pike or pike-perch were likewise hatched at this station, which was also under the supervision of William Buller. These eggs were incubated in McDonald hatching jars, each of which had a capacity of 150,000 white fish eggs. Most of the work at the Erie hatchery was carried on between October and May.

SPORTSMEN ASK NEW REGULATIONS FOR PROTECTION

On October 13, the first annual meeting, following the organization last November 3, of the Southeastern division of the Pennsylvania Federation of Sportsmen's clubs was held, starting at 11 o'clock, in the meeting rooms of the Bucks County Fish, Game and Forestry association, Lenape Building, in Doylestown.

In the election of current officers, temporary chairman Edward D. Haehnle of Bethlehem presiding, the selections for the 1936-37 year were: Charles A. Rowe, 63 E. Ashland St., of Doylestown, chairman; Ed. D. Haehnle, 1223 W. Union Blvd., Bethlehem, vice chairman; Dr. A. M. Miller, St. Clair, treasurer; and M. E. Balderson, R. F. D. Morrisville, secretary. Charles H. Nehf of Allentown, was appointed chairman of the credentials committee.

With the completion of customary business procedures the remaining part of the morning and the entire afternoon was spent in the adoption of six very important and appropriate resolutions concerning the progressive sportsmen's ideals which are to be presented before the State Federation meeting to be held at Harrisburg, Feb. 12, 1937.

1. Drawn and sponsored by the Copeechan Fish and Game association, Neffs, making more stringent regulations in the securing of hunting licenses so as to provide more protection to the property holder and aiding wardens in the enforcement of laws.

2. Limit the taking of frogs, by the use of rod, reel, and line only.

3. Present bounty claims, now controlled by statutes, to be placed under the discretionary powers of the Pennsylvania Board of Game Commissioners.

4. Providing the same powers of making seasons' limits, and adequate fishing regulations to the Pennsylvania Board of Fish Commissioners as the present Board of Game Commissioners now has.

5. The hours of hunting on the opening day to be restricted from 12 o'clock noon to 5 in the afternoon, successive days from 7 a. m. to 5 p. m. This, as the sponsors from Northampton county stated, to eliminate the meat hunter from making several trips the first day and adding further safety to the men in the field along with the endorsement of the land owners.

6. Petition the Board of Game Commissioners to provide more man-hours for the present force of deputies within their corresponding counties.

Official sportsmen representatives were present from Bucks, Montgomery, Lehigh, Northampton and Schuylkill counties.

NOW thet huntin' time is here, danged ef a feller thet likes bein' outdoors ain't hevin' his hands full. Reckon thet there ain't no better folks a-livin' nowadays than them thet likes ter hunt an' fish. I been hevin' some fun a-squirrel huntin' back o' the cornfield next ter the ridge. Some o' the boys hes got a turkey, too, an' what I likes about it is thet they ain't out ter kill more'n a nice mess o' game this year. Leavin' plenty fer seed in this neck o' the woods.

I jest can't give up the fishin' even ef the guns is bangin' these days. Seth an' me we ketched a couple right smart pike round about a week back. Two apiece, the biggest about 23 inches and the shortest about 19. Skitterin' we was with a minnie on a wire, double hook an' swivel.

Nigh onter the best time we hed, at thet, was jest t'other day over to the hole where the run comes inter the big crick. We got us some nice lively red worms back o' the barn an' figgered on some sucker fishin'. Well, sir, you never seen suckers go so hard fer bait in your life. Not like they does sometimes, nibblin' a bit at a time. No sir. Them suckers ud fool mebbe a minute er so an' then start runnin' with the hook fer fair. Put up a right lively scrap, too. One big feller thet I ketched weighed four pounds an' I'm tellin' the boys thet I knowed I had a good fish on afore I fetched him in.

Jest the right nip o' frost in the air these days ter make fishing' a lot o' fun.

"THE FISHERMAN"

"Who's the stranger mother dear?
Look, he knows us; ain't he queer?"
"Hush, my own, don't talk so wild;
He's your father, dearest child."
"He's my father? No such thing!
Father died away last spring."
"Father didn't die you dub!
Father joined the fishing club.
But now the season's closed, so he
Has no place to go, you see;
No place left for him to roam;
That is why he's coming home.
Kiss him—he won't bite you, child,
All those fishing guys look wild!"

—Clipped.

FRENCH CREEK POLLUTION CONFERENCE RESULTS

DEFINITE plans to check pollution of French Creek in the future were discussed at a meeting of City Representatives of Meadville, industrial representatives and State officials, held at Harrisburg in August.

Grover C. Ladner, Deputy Attorney General, struck the keynote at this important conference when he said:

"The policy of the Sanitary Water Board, under this administration, is to map out a schedule of procedure (in pollution cases) in which we fix time limits. The old method of merely promising to do something and then waiting three or four years and finding nothing done is gone. We ask you to fix a schedule when you will be able to make reports, and progressive steps must be put in. If subsequent steps make it impossible to keep the schedule, it does not mean that we won't extend the time. But we will fix definite dates."

The conference was attended by H. H. Bitler, representing The Viscose Company at Meadville; Paul E. Hill, chemist for the Viscose Company; Edward C. Moore, President, Moore Brothers Company, Meadville; H. A. Trebler, chemist for the Moore Brothers Company; Alfred G. Natzke, Superintendent of the Hookless Fastener Company, Meadville; Harley J. Morris, Assistant Director of Laboratories, Carnegie Hall of Chemistry, Allegheny College, Meadville; Stanley P. Miller and Charles L. Manross, City Councilmen at Meadville; Roy L. Phillips, City Engineer, Meadville; Dr. Glenn Brown, Chemical Expert for the Board of Fish Commissioners; O. M. Deibler, Commissioner of Fisheries; Charles A. French, Member of the Board of Fish Commissioners, and Grover C. Ladner, Deputy Attorney General of the Commonwealth.

At this friendly conference, the spirit of cooperation to the utmost in preventing future fish killings, similar to those which occurred in French Creek on June 30 and July 10, was apparent.

Following the conference, plans were put under way, with the results to September as follows:

Letter from Mr. Bitler, for the Viscose Company, received by Mr. Ladner on September 18:

"During our conference at Harrisburg, on August 25th, you asked me to write you before September 21st with regard to our progress in designing secondary treatment equipment for our sanitary sewage. This work was first covered by Mr. C. H. Young, District Engineer of the Department of Health, in his letter of July 6th.

"We are glad to be able to advise you that we have retained George B. Gascoigne as consulting engineer to work up designs for secondary treatment equipment which will meet with the approval of the Department of Health.

"We will do all we can to see that satisfactory plans are submitted to the Department of Health at an early date. In the meantime, we will see that Mr. Young is posted with regard to the progress we are making."

Letter from Henning A. Trebler, for the Moore Brothers Plant:

"In reference to the sewage situation at Moore Brothers Plant at Meadville, Pennsylvania, I have finished my preliminary survey and have discussed the results with Mr. Watts and Mr. Young. Both of these gentlemen agree with me that the following steps should be sufficient to take care of the pollution as far as Moore Brothers are concerned:

"1. We shall abandon the manufacture of Cottage Cheese at the Meadville Plant. This will take out the heaviest part of the pollution load.

"2. We shall install a screen basket in a concrete pit in the basement of the plant. This basket will catch all coarse material, and also bottle caps, paper, etc.

"3. We shall install a 15,000 gallon concrete tank on the bank of the creek, so as to equalize the flow over the twelve hours of the day.

"As regards No. 1, this has already gone into effect. As regards No. 2 and No. 3, we have the drawings ready, and are going up to Meadville tomorrow to get the work started.

"However, as regards the large surge tank, we shall still have to get the permission of the Erie Railroad before we can go ahead and install it. I shall write you again as soon as this installation has been completed, and possibly at that time, you will want to send Mr. Watts to take some more samples to see how much our installations have helped to improve the situation."

The City of Meadville has also pushed plans to improve the sewage disposal methods now in force, this work to be accomplished in part with aid from the Works Progress Administration.

Cook Tent at the Wardens' Training School, Spring Creek

BETTER FISHING PROGRAM OF COMMISSIONER K. A. REID ADOPTED BY WALTON LEAGUE

Approximately 50 delegates from chapters all over the State were in attendance at the annual convention of the Pennsylvania Division of the Izaak Walton League of America at the Penn-Harris Hotel, Harrisburg, on October 2 and 3. Dr. William H. Moore of Philadelphia, founder of the division and former vice-president of the Pennsylvania Game Commission, presided.

On October 2 Seth Gordon, executive secretary of the Game Commission, who was previously president of the American Game Association and prior to that conservation

director of the Izaak Walton League, gave an interesting talk on the part that organized sportsmen play in supporting the Pennsylvania game system and then told of some of the things the Game Commission is doing, "including a brief resume of its new game school for its game protectors and field men." This school, near Brookville, was officially dedicated on October 12.

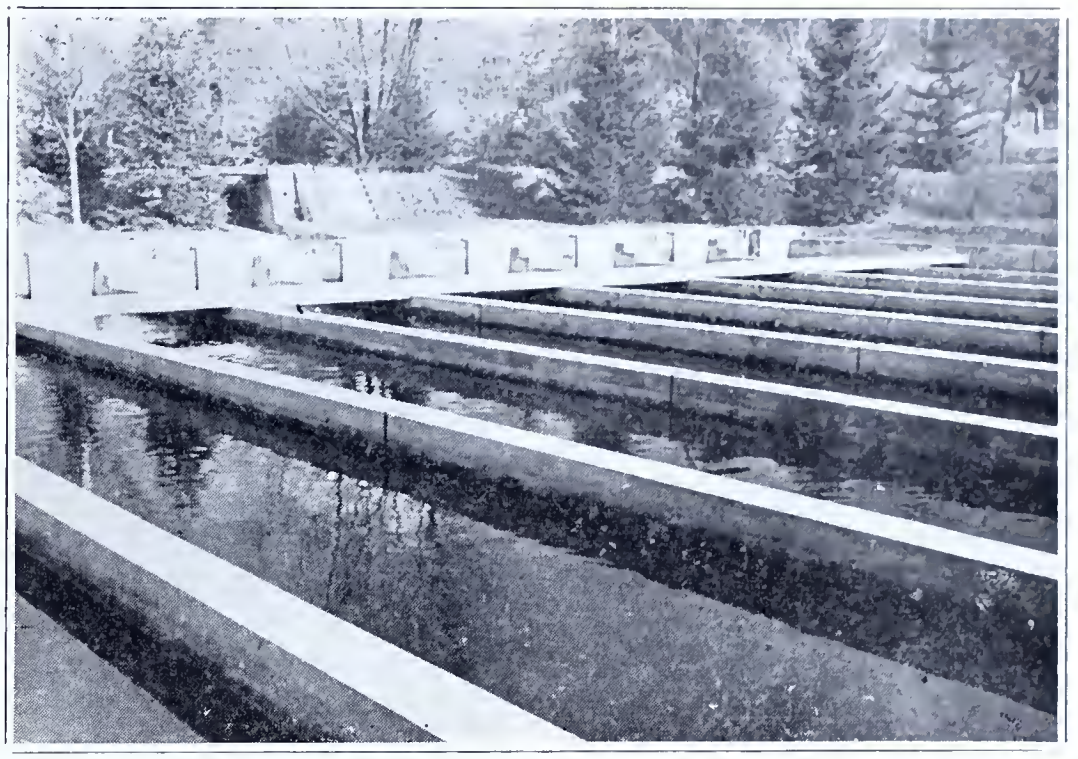
Commissioner Kenneth A. Reid of Connellsville addressed the meeting on the "Obstacles Barring the Way to Better Fishing," and outlined a three-point program for removing the three principal ones:

1. Pollution control.
2. Control and management of waters for public fishing.
3. Broader discretionary powers for the Fish Commission on a par with those enjoyed by the Game Commission.

On the first point Commissioner Reid said:

"Approximately 75 per cent of Pennsylvania's waters are polluted to the point where aquatic life is entirely precluded or so seriously impaired as to make satisfactory natural reproduction and growth of desirable fish impossible. This in turn causes such intense fishing on the remnant of unpolluted waters that their natural capacity for providing food and cover for the increased number of fish demanded by the fishermen is sorely over taxed. If Pennsylvania had anything like her original stream mileage the congestion of fishing would be very much less and the supply of fish very much greater. State laws dealing with pollution are entirely inadequate and the experience of the past 50 years has demonstrated the utter futility of attempting to correct pollution by purely state or local means. The solution lies in the passage of a Federal bill, such as S-39558 by Senator Lonergan, in the last Congress, which proposes to handle the matter on a nation-wide basis by watersheds, eliminating the age old successful argument of 'competitive disadvantage to industry,' which has successfully blocked every effort to control the pollution nuisance through the Legislature for more than 50 years. Senator Lonergan will reintroduce his bill, which has been favorably reported by the Senate Commerce Committee and has the endorsement of every prominent conservation organization in the country, early in the next session. In the meantime, your duty as a conservationist and decent citizen is to see that your senator and congressman is prepared to vote for such a measure—and be sure that they do not confuse the Lonergan bill with such weak subterfuges as the Barkley and Vinson Bills, which although labelled 'anti-pollution bills,' are actually million dollar memorials to Government bureaucracy and provide only for further endless investigation and research of a subject that has already been investigated to death."

On the second point, Commissioner Reid said that a bill would be introduced in the Pennsylvania Legislature providing for the increase of the fishing license fee to $2 net, with the provision that the additional 50 cents "be set aside in a fund separate and apart, for the acquisition by purchase, lease under proper terms, creation, improvement and maintenance of public fishing waters. This would give your Fish Commission an annual income of $150,000 for the above purposes and would in the course of a few years greatly enlarge the fishing opportunities of the average fisherman," Mr. Reid said. "It would enable us not only to protect many streams that are threatened with acquisition by private clubs and return to public fishing many miles of excellent streams that are now posted, but it would also enable your board to acquire suitable land and build reservoirs and lakes for warm water fishing in parts of the State where present opportunities for fishing are either very limited or non-existent. The 50 cents additional outlay that each fisherman would make would be repaid to him many times over in saving of expense that most of them are now forced to make in order to travel considerable distances to find fishing, to say nothing of improved fishing that would result from properly managed State owned waters. Far from being a 'rich man's measure,' the $2 license would be of especial benefit to the man of limited means—and the boys—who must get their fishing close to their homes, or not at all. The man of means can afford to go long distances to the fishing; the $2 license would bring fishing to the man of limited means who cannot now afford to reach decent fishing waters."



New Concrete Pond Unit at Pleasant Mount Hatchery

On the third point, Mr. Reid explained that the present Fish Code was so weak and cumbersome that it did not permit the Fish Commission to do many things for the betterment of fishing that obviously should be done. "When emergencies arise," said Mr. Reid, "or when conditions alter so that changes must be made in the regulations governing hunting, the Game Commission has the power under the Game Code to take the necessary measures for protecting and improving the game supply; but if your Fish Commission sees the obvious desirability of a change in the size limit, creel limit, or the season, it must wait for a specific act of the Legislature before such action can be taken. The cumbersomeness and inefficiency of such an arrangement is obvious, and it is highly important that you urge your legislators to support a measure in the next session of the State Legislature that will give your Fish Commission these much needed discretionary powers, and put it on a par with your Game Commission.

"These three matters all require legislative action; the first Federal and the second and third State. But don't forget that you have still another responsibility as intelligent sportsmen anglers and conservationists, and this one does not require any legislation. It requires merely clear thinking on the part of the individual angler in remembering and following the new slogan of the Pennsylvania Fish Commission: 'If You Would Catch More Fish Kill Less'."

Among the resolutions adopted by the convention were one endorsing Commissioner Reid's three points and another urging the Board of Fish Commissioners to increase its production of fingerling trout, particularly of the brown and rainbow species. On this point, Commissioner Reid commented: "In my opinion, the sooner we realize that the brown and the rainbow trout are the trout of civilization and map our program accordingly, the sooner we will be following a practical program for the rehabilitation of trout fishing in Pennsylvania."

The Pennsylvania Division of the Izaak Walton League of America at the closing session of its annual convention at Harrisburg elected Darlington Kulp of Reading as president. C. R. Berson, also of Reading was chosen secretary. Albert W. Holl of Media was reelected treasurer.

The nominating committee had selected Kenneth A. Reid of Connellsville as president, but Mr. Reid declined on the grounds of ethics. He said it would be improper for him to serve as head of the organization and at the same time continue to be a member of the Board of Fish Commissioners, much as he appreciated the honor tendered him by the Waltonites.

James H. Banning of Connellsville and Hudson Chandler, formerly of the Connellsville Chapter and the founder of the new New Kensington chapter, were reelected State directors.

AUGUST DISTRIBUTION

The Fish Commission distributed a total of 109,996 fish to streams throughout the state. Included in the distribution were 20,160 black bass, ranging from 1 to 12 inches in length; 24,510 brook trout, over legal size; 48,080 brown trout, from 7 to 9 inches in length; 16,710 rainbow trout, ranging from 8 to 9 inches in length, and 536 muskellunge. Waters stocked in the various counties include:

Bedford—brown trout, Yellow Creek; rainbow trout, Thomas W. Koon Lake.

Berks—black bass, Ontelaunce Lake on Maiden Creek, Maiden Creek.

Blair—brown trout, Piney Creek.

Bradford—brook trout, Schrader Creek.

Carbon—brook trout, Aquashicole Creek, Quakake Creek; brown trout, Pohopoco Creek, Wild Creek; rainbow trout, Pohopoco Creek, Big Bear Creek.

Centre—brook trout, Six Mile Run, Penns Creek, White Deer Creek, Little Fishing Creek, Cold Stream; brown trout, Spring Creek, Pine Creek, Penns Creek, Logan Branch, Bald Eagle Creek; rainbow trout, Spring Creek, Bald Eagle Creek.

Chester—brown trout, White Clay Creek; rainbow trout, East Branch Octorora Creek.

Clinton—brook trout, Cedar Run, Big Fishing Creek; brown trout, Big Fishing Creek; rainbow trout, Big Fishing Creek.

Columbia—brown trout, Roaring Creek, Fishing Creek.

Crawford — muskellunge, Drakes Mill Pond, Conneaut Lake.

Cumberland—brown trout, Big Springs; brown trout, Yellow Breeches Creek, Mountain Creek; rainbow trout, Big Springs, Yellow Breeches Creek.

Fayette—brown trout, Dunbar Creek.

Franklin — brook trout, Conococheague Creek.

Huntingdon—brown trout, East Branch Standing Stone Creek, Standing Stone Creek.

Juniata—brown trout, Lost Creek, Licking Creek; black bass, Pomeroys Dam on Tuscarora Creek.

Lackawanna—brown trout, Lehigh River; rainbow trout, Lehigh River.

Lancaster—black bass, Conowingo Dam on Susquehanna River, Safe Harbor Dam on Susquehanna River.

Lebanon—black bass, Swatara Creek.

Lehigh—brook trout, Little Lehigh River, Cedar Creek; brown trout, Little Lehigh River.

Luzerne — brook trout, Nescopeck Creek; brown trout, Huntingdon Creek, Lehigh River; rainbow trout, Lehigh River; black bass, Harveys Lake, White Haven Dam on the Lehigh River.

Lycoming—brook trout, White Deer Hole Creek.

Mifflin—brook trout, Licking Creek, Kishacoquillas Creek; brown trout, Kishacoquillas Creek; rainbow trout, Kishacoquillas Creek.

Monroe—brook trout, Bushkill Creek, Buckwa Creek, Middle Creek, Aquashicola Creek, Pensyl Creek, Tobyhanna Creek, Cherry Creek, Big Bushkill Creek; brown trout, Broadhead Creek, Lehigh River, Tobyhanna Creek, Pohopoco Creek; rainbow trout, Broadheads Creek, Lehigh River.

Montour—black bass, Chillisquaque Creek.

Oliver King Chalfont, with a 17-inch Pickerel taken in Tohickon Creek

Northampton—brook trout, Saucon Creek, Bushkill Creek; rainbow trout, Saucon Creek.

Northumberland — black bass, Chillisquaque Creek.

Pike — brown trout, Lackawaxen River, Shohola Creek; black bass, Lake Wallenpaupack.

Potter—rainbow trout, Rose Lake.

Snyder—brown trout, North Branch Middle Creek; black bass, Middle Creek.

Somerset — brown trout, Clear Shade Creek, Laurel Hill Creek.

Tioga—brook trout, Tioga River; brown trout, Pine Creek, Tioga River; rainbow trout, Pine Creek.

Union—brook trout, White Deer Creek; brown trout, Penns Creek; rainbow trout, Halfway Dam or Fourteen Mile Narrows Dam; black bass, Buffalo Creek.

Wayne—black bass, Delaware River.

Wyoming — rainbow trout, Bowmans Creek.

STRIKE BLOW AT POLLUTION

(Continued from page 5)

same state in which it was taken in, but he said that engineering science hopes to be able to reduce the condition of the waste water to a point where the natural forces of the stream will be able to take care of it."

In an open discussion of the firms which utilize water from the Brandywine Creek, Mr. Seibert mentioned the General Paper Company, of Doe Run; Shryock Brothers, of near Downingtown; Eagle Paper Mill, of near Downingtown; Downingtown Paper Company, Downingtown; The Davey Company, Downingtown; S. Austin Bicking Paper Manufacturing Company, Downingtown; Eastern Board and Paper Company, Buck Run; Paterson Parchment Company, Coatesville; Collins and Aikman, Bondsville; Lukens Steel Company, Coatesville; Bethlehem Steel Corporation, Coatesville; S. J. Aronsohn, Inc., Coatesville, and the Highland Dairy Products Company, Doe Run.

Industry's Viewpoint

The closing address of the afternoon session was by W. M. Shoemaker, on "Industrial Viewpoint of the Problem," in which were outlined the technical phases of the pollution situation, as they confront the paper manufacturers.

Roland S. Grubb presided at the afternoon session, as well as at the forenoon session. At the close of the afternoon session, seven resolutions were drawn up by a resolutions committee, and unanimously adopted on the floor of the meeting, after considerable discussion.

Pass Resolutions

The resolutions were as follows:

(1) A resolution approving the Lonergan Bill (U. S. Bill No. 3958), which provides for Federal control of pollution on a watershed basis.

(2) A resolution approving enactment of a State anti-pollution bill to empower local communities to bring action for abatement of pollution without recourse to the Attorney General. At the present time, all legal action connected with pollution must be filed with the Attorney General.

Commend Paper Firms

(3) A resolution commending the Downingtown Paper Company and the S. Austin Bicking Paper Company, both of Downingtown, for their cooperation with the engineers of the Sanitary Water Board in providing for waste paper treatment.

(4) A resolution requesting that no permit be issued to any new industry that does not make provision in advance of actual operation, for its waste water treatment.

(5) A resolution commending the Davey Paper Company, of Downingtown, and the General Paper Company, of Doe Run, for their cooperation in the matter of reducing the pollution in waste water.

Demand Action

(6) A resolution recommending that the firm of Shryock Brothers, paper manufacturers at Dorlan Station, near Downingtown, and the Eagle Paper Company, also of near Downingtown, be urged to meet the obligation that is being met by other industries in the Bradywine watershed, with regard to waste water disposal.

(7) A resolution recommending that the Highland Dairy Products Company, of Doe Run, be reminded of the fact that they entered into an agreement with the Sanitary Water Board to provide additional water disposal works, which were to have been completed by August 1st, and that failure to comply with this agreement constitutes a threat of pollution, and that they therefore be urged to comply.

Among those present at the Pollution Conference of the Friends of the Brandywine were representatives of many service clubs, Granges, farmers clubs, bird clubs, and other groups vitally interested in conservation. The affair was considered highly successful, and the organization extended its thanks to President Grubb and the speakers who made it possible.

THE OLD TIME RELIGION

(Continued from page 7)

The greatest objection I have encountered is the trouble in handling these long leaders. Two main questions are always asked me. How do you ever cast them and what do you do to land your fish when the leader is so much longer than the rod?

To answer the last first, you simply treat the leader in exactly the same manner as your line and reel it back through the guides and on to the reel. To make this possible, the simplest, smallest knot should be used to tie the line and leader together or a small gut loop spliced onto the line and renewed often enough to do away with the danger of breaking. Good sized, open guides on your rod help in allowing the knot to pass freely. After a few days, you will forget all about this part of handling these leaders.

To offset the extra weight of the line, one should balance his rod with a good sized or heavy reel. To do this will take the strain off the wrist, which will be the pivot point without a great deal of work to do and so one will not tire out during a day of casting.

Now comes the unbelievable part—all this heavy line and reel makes a perfect balance for a 3½ oz. rod! No, it is not too heavy and it won't spoil the rod half so quickly as too light an outfit which must be forced out by the rod. When the back and forward casts are properly timed, the rod receives very little strain because it is not necessary to put much force into the casting—the weight of the line will carry through for you once it is started on its way. And in a breeze it is doubly valuable.

The rod to use is the result of a steady evolution from heavy 10-footers to our present day 7½ and 8 foot 3¼ to 4 oz. rods. These light rods have made possible the use of the 4X or 5X leaders. The big rods would snap the leader too quickly—the sensitive tip on the small rods will not break the finest leader unless forced to do so.

The one who handles this outfit is, naturally, the most vital part of all. Skill in casting is one thing, the method of approaching a pool and where to cast is another. Let's go back to that unusual catch by my friend at the Beaverkill Trout Club. How did he approach the pools? Well, for one thing, in the words of Burr Sherwood—"I'll be darned if he didn't travel that stream on his knees!" I know that to be true, because Ray's knees are hard and calloused from such wading. By the end of the season he can travel any kind of bottom on his knees without discomfort.

And for his casts, as Burr said, he put that fly in the dangdest places, sometimes on short lines, sometimes he cast the length of the stream. Fishing the hardest places takes patience and practice but it brings results. Not that all the fish were taken in hard places, for some came from the foot of pools where it was necessary to almost crawl in the stream to keep out of sight and cast with only the leader beyond the rod held high to avoid the drag that is almost inevitable as the fly reaches the very last stretch in the pool.

In such fishing, forget that the middle of the stream exists, unless there is some unusual cover there. As Coty says, fish the banks, the closer you can cast the better.

W. A. Schram and H. T. Armstrong of Bethlehem with their catch of Bass and Pike from the Upper Delaware

In still, low, clear pools, the fish know full well their danger when exposed and so hug close to the banks or other good cover. It is rarely that they are in the open water except after dark or on those few occasions when they come out for a little daytime dessert.

For anyone who is interested enough in his fishing to want to try out the new doctrines, I believe I have suggested enough to whet his curiosity to the point where he will want to give this new fishing religion a try. It might be well to start in with 12-ft. leaders and increase the length as you become used to handling the new outfit. And it might also be wise to pad your knees until they toughen up. And certainly you will have to learn control of your patience when fishing the hard spots.

If you want to catch trout in streams which are heavily pounded day after day, you have got to offer them something new in a new way. Forget the old time fishing religion; it may have been good enough for father in his day when trout were plentiful and not heavily fished, but it certainly is not good enough for you. That is, not if you want to catch trout.

Of course, if you go fishing just for the trip and to keep money in circulation, that's different. But as for me, I sort o' hanker to catch a trout once in a while!

FRESH WATER FISH CAUGHT ELEVEN MILES OFF CAROLINA COAST

Illustrative of the enormous volume of water that has been pouring down the rivers along the Atlantic Coast during the past three months, a five-pound German carp was captured in a shad net by Captain Reuben Guthrie at a point eleven miles at sea from the mouth of the Cape Fear River in North Carolina.

The carp is strictly a fresh-water fish, and this one must have come down on the flood from some point far inland and was making itself at home in the more or less saltless ocean waters along the coast. Most of the salt-water fish have been driven out to sea by the extraordinary amount of fresh water that has come down the coastal rivers, and this is believed to be the cause of generally poor fishing conditions along the shore.

HOLDS CASTING TOURNAMENT

The Hunters' and Anglers' Association of Greater Harrisburg held a casting tournament at Italian Park on August 15th, in cooperation with J. Calvin Frank of the Harrisburg Park Department. More than 400 persons attended this event and manifested great enthusiasm.

O. Ben Gipple was elected president of the association; William B. McCaleb, vice-president; Lewis S. Kunkel, secretary; Donald Martin, treasurer. The association adopted their charter on September 15th, and chose the *Pennsylvania Angler and the Pennsylvania Game News* as their official magazines. The dues were set at $1.00, which includes a subscription to either of the above magazines.

STREAM IMPROVEMENT IN LANCASTER COUNTY

First of Pennsylvania counties to apply for relief funds to carry on stream improvement work, Lancaster County has already made splendid progress in improving trout streams and as a result, it is said that fishermen during the past year have declared that the best trout fishing in 20 years has been afforded by county streams. Under the State Emergency Relief Board, $9,075 was spent to carry on this work. Much credit for securing the program for stream improvement goes to the Lancaster County Federation of Sportsmen, affiliated with the State Federation, officials in the Works Progress Administration, and county officials.

So successful was the first work undertaken that $34,000 additional funds to carry the work further was applied for and obtained under the Works Progress Administration. This active program of stream betterment in Lancaster County apparently set a precedent for sportsmen in other counties of the state and similar projects are now under way in a number of counties.

When completed, the Lancaster County projects will have placed 3750 improvement devices in approximately 11 miles of trout streams. Included in the devices are Deibler dams, current deflectors, covers and retards. The work is being carried out with three gangs of workmen, each comprising 20 WPA workers. General superintendent of the work is R. S. Sullenberger, of Lancaster, active sportsman.

This project has already served to increase fishable areas of Lancaster County trout streams.

LANDS NICE MUSKIE

Billy Wilson, son of Glen Wilson, secretary of the Shenango Valley Chapter of the Western Reserve Fish and Game Protective Association, caught a 30-inch muskie in the Shenango River at Sportsmen's Paradise near Clarksville.

Billy was staying with his parents, who have been camping there all summer. He has been fishing in the Shenango for eight years and this has been his biggest catch.

The fly fisherman catches more trout and bass than the bait fisherman does over a season, we are led to believe.

HERE AND THERE IN ANGLERDOM

Butler fishermen are finding good bass fishing in reservoirs of the county this season, according to Special Warden Clifton E. Iman. Included in good catches of largemouth bass is that of Carl Slear of Butler. Slear had taken, by September, 11 nice bass, the smallest measuring 11 inches in length and the largest 19 inches. Claire Graham of Butler landed 16 bass, the smallest 12 inches and the largest 18 inches in length.

More reports of bass catches in the Perkiomen Creek, to date this season, by LaMar Mumbar of Pennsburg: Ralston Derr of Green Lane, principal of the Marlborough Consolidated School, recently caught his 25th bass of the season from the Perkiomen. It measured 19 inches in length. Other bass taken ranged in length from 15 to 19½ inches. Floyd Smoll of Red Hill, 14 years old, caught a fine bass measuring 19½ inches in length. Clarence Woodward, 12 years old, of Red Hill, scored with one of the finest bass taken to date in this famous southeastern Pennsylvania bass stream, an old-timer of the bronzeback clan, measuring 21½ inches. George Caterman, East Greenville, landed a 19-inch bass. Clarence E. Roth, of Pennsburg, landed five bass, averaging 11 inches in length. One of these fish was a freak, having only one eye.

Listed with the big brown trout taken during the 1936 trout season is the 24 5/8 inch brownie caught by Norris Pearson of Mackeyville. He was assisted in making the catch by his friend Paul Pickering. The big trout, taken on a worm, weighed 4 pounds, 15½ ounces.

The lower Susquehanna River in the vicinity of Columbia, Lancaster County, has been producing some good bass fishing this year. Samuel Helm of Columbia caught a smallmouth bass measuring 20½ inches in length and weighing 3 pounds 3 ounces. An eel measuring 34 inches in length and weighing 4 pounds 12 ounces was landed by Corporal W. P. Snyder of the State Police, stationed at Columbia.

A Works Progress Administration project, sponsored by the White Haven Conservation Club, is destined to improve the fishing on Linesville Creek, a popular trout streams near White Haven. Ten Deibler dams, ten log dams and deflectors are scheduled to be built. Under the leadership of J. R. Fox, prominent conservationist of White Haven, the Club is going places to improve fishing in that section of the state.

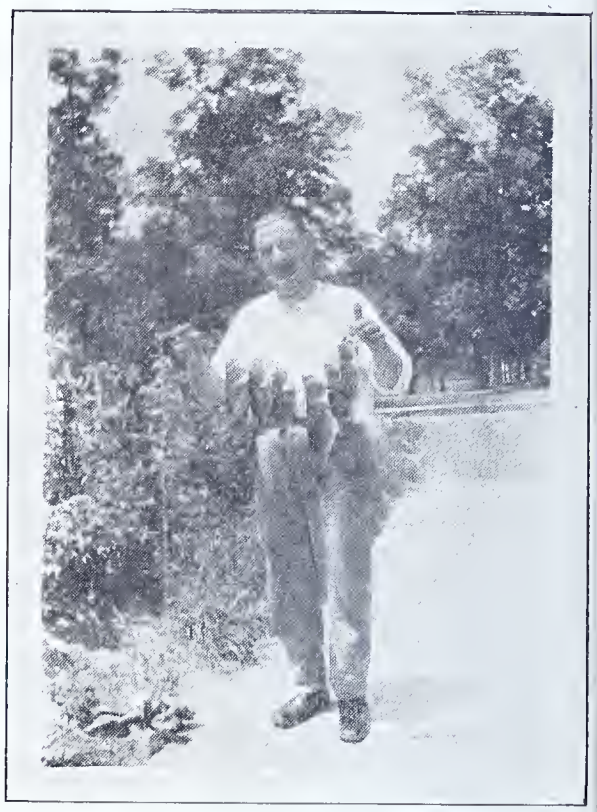
The good old Raystown Branch of the Juniata River in Bedford county has been right up with the top-notch bass producers this year, according to Special Warden Harry Moore of Hopewell. John People caught a splendid smallmouth bass measuring 20 inches in length and weighing 4 pounds. Fishing on the Raystown in Huntingdon County, H. P. Barringer of Martinsburg scored with a smallmouth measuring 19½ inches and weighing 3 pounds 8 ounces. Charles Bonebrake of Martinsburg caught two smallmouth bass, each 14 inches in length. Seven smallmouth from 13 to 14 inches in length were taken in a day's fishing by C. E. Sipes of Martinsburg.

Edwin K. Morse, veteran Pittsburgh sportsman, suggests as an additional slogan for fishermen: "If you would catch more fish, Kill Fewer."

Fishing in Deer Lake, Schuylkill County, Joe Rice of Pine Dale entered into that very exclusive anglers' club, the "Two on One Club," according to Warden Anthony Lech of Cressona. Two bass, both smallmouths and each 17 inches in length, struck his plug and were landed. On the same trip he scored with a 20-inch smallmouth bass. A plug fisherman's red letter day, if you ask us.

It isn't so very often that big wall-eyed pike are taken on fly, so that the catch of R. L. Stolts of Towanda by this method on the North Branch of the Susquehanna is real fishing news. Stolts caught a 24-inch wall-eyed pike on fly, according to Warden Myron Shoemaker of Laceyville. Fishing bass bugs, Paul McCracken of Towanda landed two smallmouth bass, 15 and 16 inches in length respectively. A plug accounted for a 6 pound 8 ounce largemouth bass, taken on Spring Lake by E. S. Tupper of Wyalusing. Alternately fishing fly and plug, Boyd Carter of Meshoppen took four bass ranging from 3 to 3½ pounds in weight from the North Branch. Harry Michael and George Ross of Laceyville each landed a three-pound bass using bass bugs. Two hours of fishing yielded six smallmouth bass averaging two pounds apiece to Harry Webb of Towanda. He reports more big bass in the North Branch this year than he has observed in years. Ken Moyle of Laceyville landed two 2-pounders on bass bugs, and Hugh Conrad scored with a 19½ inch smallmouth, also taken on a bass bug.

Fishing in Promise Land Pond, Pike County, on July 14, W. Gillespie of Bethlehem, made a catch of nine fine pickerel, according to Warden Frank Brink of Milford.



Harry Stauffer, Harrisburg, Displays His Catch of Smallmouth Bass and Rock Bass from the Susquehanna River near Harrisburg

Eight big pickerel, having a combined weight of 25 pounds, were taken during a day's fishing by Harry Fuls of Gruvertown, according to a report received from S. W. Hobson, special warden. Of the fish, taken on a "crippled minnow" type of plug, the largest measured 27 inches in length.

Hobson also reports that Charley Adams, well known undertaker of Easton, landed 10 smallmouth bass, averaging 13½ inches in length and several large eels while fishing in the Delaware River near Sandt's Eddy on August 5. The catch was made on helgramites.

Several fine bass, the largest measuring 16½ inches in length, were taken recently on the Fogelsville Dam in Lehigh County by Joe Gagenbach of Allentown.

LANDS BIG BASS

Fishing near the mouth of the Loyalsock Creek in Lycoming County on October 3, Hal Bostley of Penbrook landed one of the largest bigmouth bass reported taken in Pennsylvania waters to date. His catch was 23 inches in length and weighed 6 pounds 12 ounces. The big fellow hit a plug.

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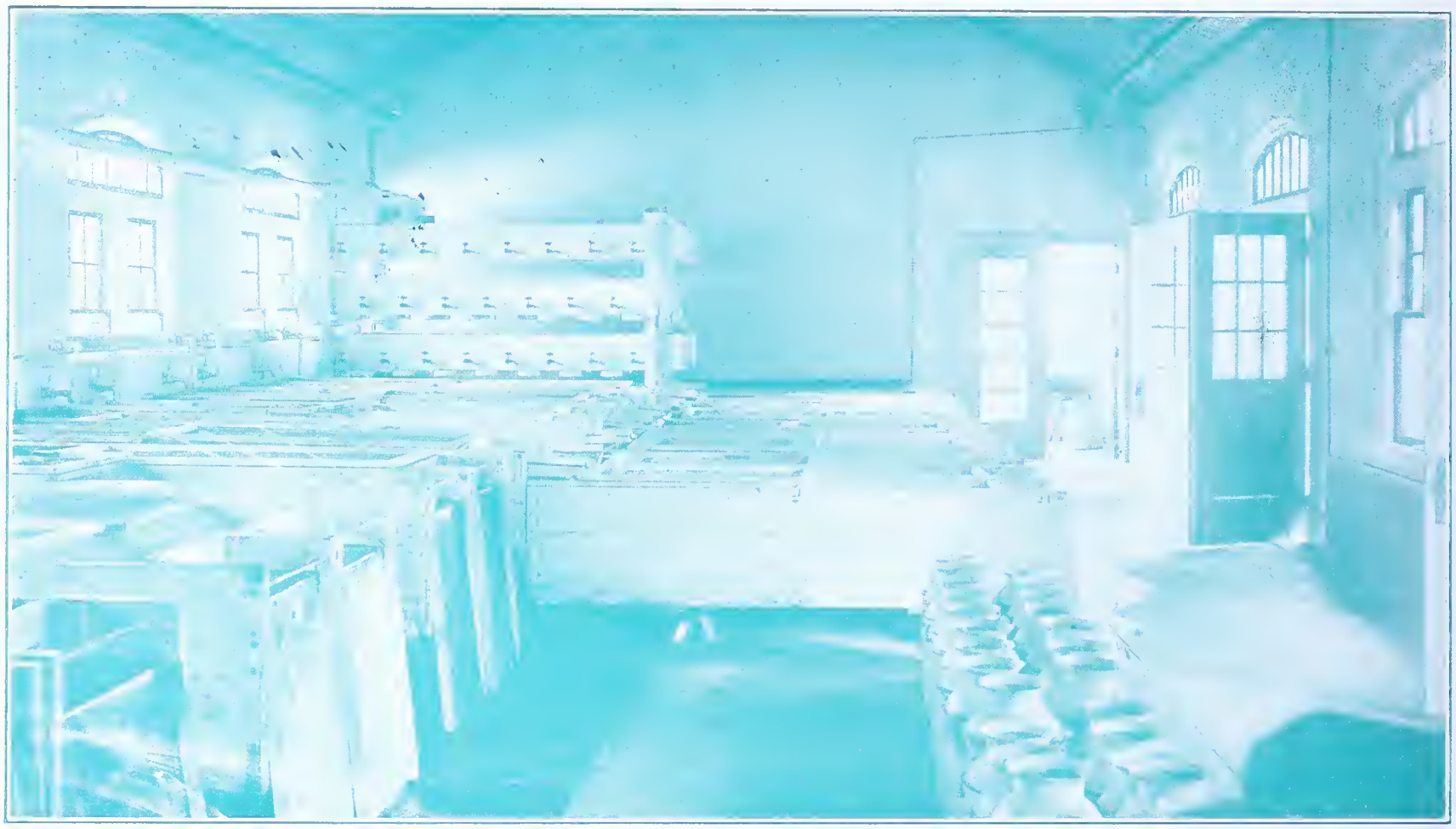

Sorting and Shipping Room at the Pleasant Mount Hatchery, Wayne County

PENNSYLVANIA ANGLER

WINTER ON THE PERKIOMEN

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PHOTO BY LA MAR MUMBAR

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Vol. 5. No. 12

PENNSYLVANIA ANGLER

DECEMBER, 1936

EDITORIAL

Commission Scored Advances This Year

As 1936 is drawing to a close, it is a most appropriate time for the Board of Fish Commissioners to extend Pennsylvania fishermen and sportsmen, Yuletide Greetings and Best Wishes for many happy days astream during 1937.

When we reflect over the year, it is most gratifying and encouraging to note advancements made that will guarantee for the betterment of our future fishing in Pennsylvania. We have many definite and concrete results that have been obtained under the leadership of Governor Earle and the efficient enforcement of our present pollution laws under Grover C. Ladner. During the year, the source of many of our most harmful pollution and fish killings have been entirely eliminated, and corrective measures taken in many others that will restore a great many miles of heretofore polluted waters to such a condition that they will again support fish life. In some instances it was necessary to use the strong arm of the law, while in others, industry showed a marked willingness to cooperate in eliminating pollution from our waters.

In spite of the natural handicaps of the most severe winter in history when many of our streams froze almost solid to the bottom, and then followed by the most disastrous flood in the history of our State, and later on in the summer months by a very severe drought, many of our streams reached the lowest level in their history, the reports reaching us from fishermen indicate that the fishing season was successful in spite of the handicaps.

A review of the bass season, which closed on November 30th, indicates that our bass waters are staging a splendid comeback. The old favorite bass waters yielded their usual catch and in addition, many new areas that have been stocked in recent years showed surprising results.

The Board enlarged its bass work very considerably this past year and instead of confining our bass work to the one large hatchery at Pleasant Mount, we developed new areas at Spring Creek, Centre County, Huntsdale, Cumberland County, Reynoldsdale, Bedford County, Torresdale, Philadelphia and the Union City Hatchery in Erie County was completely given over to the propagation of bass. The results of the expansion was, that while our numbers of bass stocked were not as great in proportion as was the size and quality of the bass produced, many complimentary letters have been received at the office from bass enthusiasts complimenting the Board on the size and quality of the bass shipped into the respective territories.

Much of the success in our bass work has been the result of experimenting over a number of years, especially in regards to the feeding which has always been the big problem for the bass culturists. C. R. Buller, our Chief of Fish Culture, and his able staff of assistants are to be congratulated for their fine showing in our bass work this year.

Equal to the bass in popularity with the sportsmen are the brown, brook and rainbow trout which have been heavily stocked with fish of legal size during the past year, and should insure real sport for the trout fishermen when the season opens next spring. The March flood affected the trout work more than any other as we suffered severe loss, not only in the great number of trout that were washed away, but many of the rearing pools were completely destroyed and had to be rebuilt. The trout fishermen were indeed fortunate that even after suffering the severe loss by the flood and the severe winter, they were still able to enjoy fairly successful trout fishing and with the splendid supply of trout of legal size at the present time in our hatcheries for stocking next spring, and with the one-half million or more that have been stocked this fall, we can look forward with considerable optimism to the 1937 trout fishing.

In spite of the increased interest and activity in regards to trout and bass, the Board has not neglected that other class of fishermen who enjoy fishing for the panfish or sometimes termed our food fish. The heaviest stocking in the Board's history of some of these species of adult size has been made during the past year so that the great army of fishermen who enjoy the lowly sucker, bluegill, yellow perch and bullhead or catfish can look forward to some very enjoyable days next spring when the season for this type of fishing comes around.

The Board has been greatly encouraged and wishes to extend their thanks and congratulations for the fine cooperation received from the sportsmen during the past year. In past years it has been sometimes difficult to get sufficient and proper help in stocking the fish when delivered to the stream. There has been, however, a very marked increase in interest and willingness on the part of the sportsmen to lend valuable assistance during the past year.

I have often said and remarked repeatedly that the future of our fishing rests entirely in the hands of the fishermen. The Board can produce all the fish our available funds will provide, and yet that would not solve the problem of our fishing, if the sportsman does not do his part in helping to protect these fish which are their own property, and to help in providing suitable food and cover in our waters. The problem is squarely up to the fishermen, whether we are to perpetuate this sport for the future, as it is one type of sport where all the pleasure can be enjoyed without ruining its source. This can be accomplished by practicing conservation in not killing more fish than is one's share and always showing due respect and consideration for his fellow-sportsmen. It is not how many fish you catch and kill, but how many are left that counts—that is our over-lasting guarantee for the future of our sport. Let us always practice the Board's slogan, "IF YOU WOULD LIKE TO CATCH MORE FISH, LET US KILL LESS."

O. M. Deibler

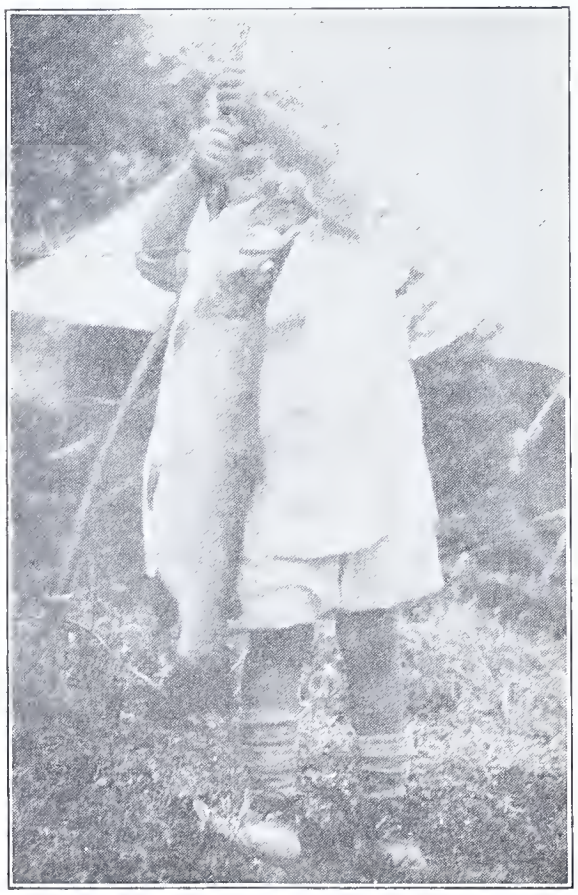
Commissioner of Fisheries

PENNSYLVANIA RECORD FISH FOR 1936

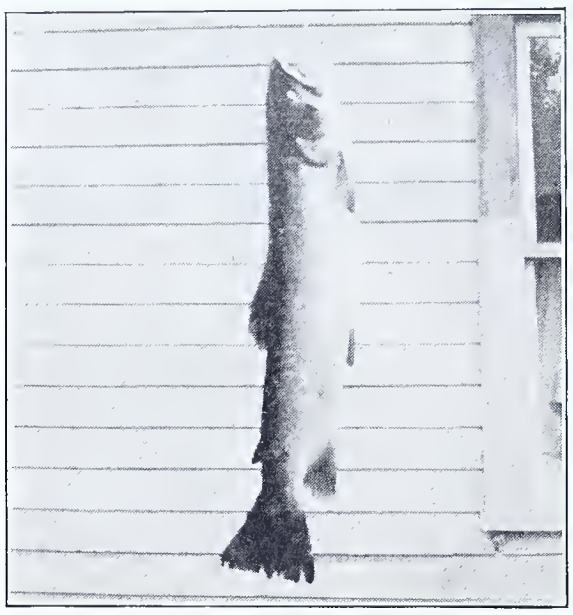
By ALEX P. SWEIGART

WHILE 1936 may have been an erratic year from the weather angle, flood and drought considered, it produced for Pennsylvania anglers many big game fish. We may say, without prejudice, that the catches made in our streams and lakes this year compare favorably with those of other seasons on record. Perhaps the most encouraging angle to the situation relates to bass fishing. While the largest smallmouth bass and largemouth bass reported his year, did not quite achieve the weight of the record bass in the two classes reported for 1935, definitely more reports of bass from 3 to 5 pounds in weight were received.

In reviewing the season catch, we shall, as has been our custom, start with the first fishing of the year, sucker fishing. Extremely cold weather and frozen streams prevented much sucker fishing during the winter, and when the ice broke in March, the flood virtually pushed opening of spring sucker fishing well into April. Consistently heavy catches of these fish were made, however, with the Juniata River and its tributaries again leading the list as sucker streams. The Allegheny River also forged to the front as a sucker producer. The record sucker catch of the year and also the largest fish of this species reported was taken from the Juniata River above Lewistown by Joe Mowery, veteran Lewistown fisherman. Fourteen suckers comprised his catch, the smallest measuring 14 inches in length and the largest 22 inches. This 22-inch fish, weighing 5 pounds, was the largest reported, although it was closely pressed for first honors by a 23-inch sucker, taken from the Allegheny River by 11-year old Jack Layden of Franklin, which weighed 4 pounds 8 ounces. Alton Meloy of Port Royal caught a 22½-inch sucker in Tuscarora Creek that weighed 4 pounds.



F. M. Geer's Runner-Up Brownie From the Brokenstraw



William Vandermark's Record Brown Trout For 1936

Fishing for other species of food fish was also popular this year. Many fine bullhead catfish were taken, the largest reported weighing three pounds. It was caught in Wildwood Lake in suburban Harrisburg on shrimp bait by W. C. Smith of Harrisburg. Lawrence Frey, 15 years old, of Estella, caught the largest yellow perch reported, a fish measuring 15½ inches in length, no weight given. He made the catch in Elk Lake, Sullivan County.

In the bluegill sunfish classification, a record was set this year that may stand for a long time. While fishing early in August in what is known as the "gut" of the Lehigh River at Island Park near Easton, Arthur Umholtz of Easton landed a veritable giant of the sunfish clan. The big bluegill was 10 inches in length, and tipped the scales at one pound 12 ounces.

Howard Miller, 15, of Richfield, Juniata County, scored an equally surprising catch in the rock bass classification while fishing in Meiser Dam on the Mahantango Creek in Snyder County on July 4. The rock bass he landed measured 11¼ inches in length and weighed one pound 15 ounces.

Fishing for carp is attracting an increasing number of fishermen throughout the state, and if there is a carp-fishing center, Mount Carmel must be accorded that distinction. Largest of the carp reported this season was the mammoth fish taken in the West Branch of the Susquehanna River by Frank Balchunas of Mount Carmel. This fish measured 36½ inches in length and weighed 26 pounds 8 ounces. Joe Yeager, financial secretary of the Mount Carmel Game and Fish Protective Association, which is conducting a carp contest this year, caught a fish which pressed Balchunas' catch closely for first honors in the carp division. It weighed 23 pounds 8 ounces. A 21-pound carp, having a girth of 23½ inches and length of 36 inches, was caught in the Allegheny River by Henry Zdanowski of Vandergrift.

From every angle, fishing for panfish and food fish was highly satisfactory during the past year.

The Trout Season

Ushered in by a mild opening day in mid-April and waters still running heavy currents from spring rains, the trout season produced some fine catches of brook, brown and rainbow trout. While, in the brook trout division, the largest fish does not approach in weight or length the 4-pound brookie taken last year by John Lucas in Sullivan county, many fine speckled trout over 10 inches in length were reported from streams in various sections of the state. A feminine angler, Mrs. Edna Salamy of Shenandoah, has the distinction this year of having taken the largest brookie reported. Her catch, a 17-inch fish, was taken in Fishing Creek, Columbia County. It was a gracefully proportioned and brilliantly marked brook trout weighing 2 pounds 8 ounces.

Lake Koon in Bedford County produced the outstanding rainbow trout catches of the year. Topping the list of big rainbows taken in this recently formed lake on Evitts Creek was a 24½-inch fish, 11 inches in girth and weighing 4 pounds 5 ounces. Rawley Swayne, veteran Cumberland, Md., angler made the catch, using a five ounce fly rod. A rainbow taken from Evitts Creek on May 2 by Mrs. J. W. Merritts of Monessen pressed Swayne's catch closely for first honors. It measured 22 inches in length and weighed 4 pounds. A 23-inch rainbow trout was caught in Lake Gordon, immediately below the Koon dam by Joe Hasselberger of Cumberland, Md.

Big Browns

Outstanding of the trout catches were those made in the brown trout division. If

Record Rainbow Trout Caught by Rawley Swayne

John Ewing With His Record Smallmouth Bass

we are to base our opinion as to the dominant species of trout in Pennsylvania upon the number of big trout reported, the brownies are well in front.

The Lackawaxen River in Pike County once more produced the record trout taken in the state. A 29-inch fish weighing 7 pounds 4 ounces, it was caught on live bait by William Vandermark of Milford. Vandermark made a notable catch on this occasion, May 16, landing two other big browns 22 inches and 23 inches respectively in

Bill Vandermark With His Catch of Three Browns Weighing 14 Pounds

PENNSYLVANIA ANGLER HONOR ROLL—1936

BROOK TROUT

Length 17 inches; girth not given; weight 2 pounds 8 ounces. Caught in Fishing Creek, Columbia County, by Mrs. Edna Salamy, Shenandoah. Lure used—not given.

BROWN TROUT

Length 29 inches; girth not given; weight 7 pounds 4 ounces. Caught in Lackawaxen River, Pike County, by William Vandermark, Milford. Lure used—live bait.

RAINBOW TROUT

Length 24½ inches; girth 11 inches; weight 4 pounds 5 ounces. Caught in Lake Koon, Bedford County, by Rawley Swayne, Cumberland, Md. Lure used—not given.

SMALLMOUTH BASS

Length 21½ inches; girth not given; weight 5 pounds 1 ounce. Caught in Upper Allegheny River by John Ewing, Tarentum. Lure used—plug.

LARGEMOUTH BASS

Length 23½ inches; girth 17½ inches; weight 7 pounds 5 ounces. Caught in Stillwater Lake, Monroe County, by John P. Hosier, Easton, R. D. 2. Lure used—plug.

WALL-EYED PIKE

Length 27 inches; girth not given; weight 8 pounds 4 ounces. Caught below Safe Harbor Dam on Lower Susquehanna River by Max Nettke, Lancaster. Lure used—plug.

PICKEREL

Length 28½ inches; girth not given; weight 5 pounds 10 ounces. Caught in Pecks Pond, Pike County, by Harry Fuls, Bangor. Lure used—not given.

MUSKELLUNGE

Length 46 inches; girth not given; weight 22 pounds. Caught in Lake LeBoeuf, Erie County, by K. Miller, Pittsburgh. Lure used—trolling rig.

ROCK BASS

Length 11½ inches; girth not given; weight one pound 15 ounces. Caught in Mahantango Creek, Snyder County, by Howard Miller, Richfield, Juniata County. Lure used—worm.

BLUEGILL SUNFISH

Length 10 inches; girth not given; weight one pound 12 ounces. Caught in "gut" of Lehigh River, Northampton County, by Arthur Umholtz, Easton. Lure used—not given.

YELLOW PERCH

Length 15½ inches; girth and weight not given. Caught in Elk Lake, Sullivan County, by Lawrence Frey, Estella. Lure used—not given.

BULLHEAD CATFISH

Length and girth not given; weight three pounds. Caught in Wildwood Lake, Harrisburg, Dauphin County, by W. C. Smith, Harrisburg. Lure used—shrimp.

SUCKER

Length 22 inches; girth not given; weight 5 pounds. Caught in Juniata River, Mifflin County, by Joe Mowery, Lewistown. Lure used—worms.

CARP

Length 36½ inches; girth not given; weight 26 pounds 8 ounces. Caught in North Branch of Susquehanna River by Frank Balchunas, Mount Carmel. Lure used—commercial carp bait.

Note the Heft of This Record Largemouth Bass Caught by John P. Hosier

length. The three had a combined weight of 14 pounds. Another brownie taken in the Lackawaxen by Emmett Streiter of Milford measured 21 inches in length and weighed 3 pounds. Dewey White of Blooming Grove scored with the dry fly on this stream on May 20, landing a 24-inch trout. The weight was not given.

Turning to other trout sections, we find a Brokenstraw Creek, Warren County, brown trout, heavy in girth, 27 inches long and weighing 7 pounds pushing the record brownie closely. F. M. Geer of North Warren made this notable catch, after a 30-minute battle. He was using a home-tied fly and 5 ounce rod.

Lake Wallenpaupack in Pike and Wayne Counties yielded a 27-inch brownie that weighed 6 pounds 12 ounces to Harry Bea of Hawley.

Fine catches of big brown trout were reported from the Little Lehigh Creek in Lehigh County. John Werst of Alburtis caught a 26-inch brown trout weighing 5 pounds 5 ounces and having a girth of 11 inches. A 23½-inch brown caught by Carl Heinly of Emaus had a girth of 14 inches and weighed 5 pounds. The weight of a 26½-inch brown caught in the Little Lehigh by John Ambrose of Bethlehem was not given.

Fishing Creek in Clinton County each year produces some of the biggest brown trout taken in the state. This year, J. W. Bletz of Tylersville landed a 27¼-inch brown trout on a minnow that weighed 6 pounds 12 ounces. Clyde Blesh of Lock Haven had taken another big brownie prior to this catch from the same stream that measured 24½ inches in length, had a girth of 13½ inches and weighed 5 pounds 11 ounces. They grow plenty heavy, those brownies in Clinton County's Fishing Creek, and an abundant food supply must be the answer.

Largemouth Bass

Stillwater Lake in the Poconos, famed for the weight of the largemouth bass it yields each year, produced the record largemouth

(Continued on page 17)

TROUT STREAM INSECTS

CADDIS FLIES

(PART 2)

By CHAS. M. WETZEL

THE Trichoptera or caddis flies are found on practically all of our fresh water streams and as trout food they probably rank second to the mayfly in importance. Like the Ephemeridae, they appear at times in immense swarms although their emergence is not characterized by the unanimity by which the mayflies appear over the water.

The adult insect may be recognized by its small prothorax, its prominent eyes and by the manner in which its wings slope roof like over the abdomen.

Probably the majority of females extrude their eggs in a string, but certain genera particularly Brachycentrus, may often be noticed carrying the spherical shaped egg masses at the end of the abdomen during flight. It is recorded that the latter drops her eggs in a mass but this point has never been satisfactorily verified. This egg sac we often copy in our artificial flies when imitating the female of the species. In perhaps the majority of forms, the female descends beneath the surface for oviposition. Her descent into the water is accomplished in some cases by swimming, in others by crawling down the stems of aquatic plants. The egg mass, covered with a thick coat of gelatine adheres to the body of the female long after it has appeared and often the fly crawls under sticks or stones with the mass still attached. An hour or so after oviposition the insect dies, either on the surface of the water or on the bed of the stream; in any case, she does not leave the water after laying the eggs.

There are many anglers unaware of the above who maintain that there is no object in fishing a winged wet fly, basing their argument on the fact that after death, an insect floats and that the only time it is exposed to the trout in the sub-aqueous stage, is when it rises to the surface to effect its metamorphosis to the winged fly.

Until Halford's time during the latter part of the nineteenth century, dry fly fishing was more or less unknown. G. E. M. Skues, pioneer exponent of nymphs, had not yet appeared on the scene and revolutionized the sport, for a certain class of anglers. Until that time we knew nothing of dry flies and nymphs; yet for hundreds of years back our ancestors had been fishing the wet fly with complete success. Can it be possible that trout accepted these winged flies for nymphs ascending to the surface? I doubt it—the trout is not a stupid fish. My theory is, that they accepted the imitations for the insects they represented—caddis flies crawling beneath the surface of the water to lay their eggs. In fact, that may have been the origin of wet fly fishing.

After the larva is hatched, it commences to build a case in which it dwells during the larval stage. These cases are made out of a variety of materials, such as sticks, bark, sand, stones and leaves, or practically any material found on the stream bed. Naturally they are inconspicuous and rarely noticed, unless one takes the time to look for them.

Certain species have a definite type of architecture, yet if there is a scarcity of material, they will content themselves with other substance found on the stream bed. Some may even appropriate a home vacated by others.

The cases are built either from the secretions of the salivary glands or more commonly from a great variety of vegetable or mineral matter, that is fastened together into a case by means of the salivary secretions. The interior of the structure is perfectly smooth and round, slightly wider than the larva and its lower end is practically closed, having only a small hole to allow the passage of water.

The larva is worm-like in form and equipped with a pair of horny hooks at the hind end of the abdomen. So securely do these hooks or anal prolegs grasp the case, that oft times the worm is torn in two when one tries to pull it forward from its home. While sliding in these cases or sheaths, they are known as caddis worms or caddis creepers; and the larva by thrusting forth from the sheath, its head and forefeet, drags the case along wherever it desires to go.

In the sketch I have illustrated a number of these cases. Helicopsyche and Ganonema, both considerably enlarged, are not as commonly found as other genera. Limnephilus and Stenophylax, the cinnamon and silver sedge flies are drawn to scale, from specimens I at one time reared in my aquarium. Brachycentrus is conspicuous by its square tapering case; and in this genus falls the American grannom, a trout fly that appears in large swarms on our waters. In the "American Anglers Book," by Thaddeus Norris, 1864, appears this highly significant comment: "The grannom has a body of hare's fur; wings of a partridge feather made full; legs of a pale ginger hackle, and a short tuft of green floss silk at the tail, to represent the bag of eggs which this insect carries at the extremity of its body. In this country, the grannom is found on the water towards sundown around the latter part of June; this imitation of it is a killing fly as a stretcher on a No. 8 hook."

The above dressing is practically identical with that taken from Ronald's "Fly Fishers Entomology," and again later on was not changed materially in Mary Orvis Maybury's book of "Favorite Flies and Their Histories." From the information given above, there can be no doubt as to the existence of the grannom, and to its being almost an exact duplicate of the English grannom Brachycentrus subnubilus.

Suppose that we delve further into the annals of piscatorial entomology. Louis Rhead, in "American Trout Stream Insects," discourses at length on the shad fly, a caddis fly bearing this same green egg sac, and an insect that appears in immense swarms on the Willowemoc, the Beaverkill and other trout streams of New York State. The name of shad fly, which he has given it, is a local term, similar to our "shad fly," Hexagenia limbata, the large mayfly or green drake, that appears on Penn's Creek, Spring Creek and other central Pennsylvania streams. This insect, which the author depicts in a number of positions, I believe to be the American grannom, Brachycentrus fuliginosus, has a wing spread of approximately one inch; body, black or dark greenish brown; wings, brown, sprinkled with light yellow hair; antennae and legs, light brown.

The cases of Psilotreta, Neuronia and Phryganea, I have also pictured, but as I mentioned before, it does not necessarily follow that the occupants belong to the above genera.

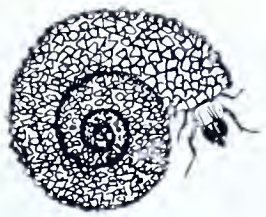
Hydropsyche, one of the carnivorous larva, lives in the swift water in a rather rude but firmly fixed hut of pebbles and debris; not far from its door it makes a net between small stones, or on the top of some large stone where it is in the current's path. The nets open upstream so as to catch food washed down by the current and often they are woven so closely together that nearly all the water is filtered through them. In its trips to secure the food which the net has caught, the larva keeps hold of a strand of silk which has one end fastened to the door, so that it can pull itself back if the current should loosen its footing. Many larvae built nets from both ends of their cases. There are still other forms which wander about freely over the stream bed, never building cases until ready to assume the pupa stage.

Just before this metamorphosis occurs, the larva fastens its case to some support, and then closes both ends with stones, silk mesh or a membrane which allows the passage of water.

The pupal period lasts about two weeks and while so enclosed the insect undergoes a change peculiar to this stage, the wings form and the body alters its shape. When the time for transformation arrives, the fully formed pupa (enveloped in a thin skin or cocoon) tears open the screen door at the mouth of the case, and rises to the surface. This ascension is effected by swimming or in some cases by crawling up the stems of aquatic plants. The process of emergence may occur while the insect is wholly out of the water or at the water's surface. The pupal integument bursts over the thorax and the parts of the adult are pulled out—first the head, then the fore and middle legs, the antennae, the wings and hind legs and finally the abdomen. The period of the adult life varies from four

(Continued on page 11)

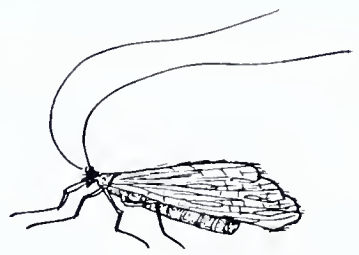
LIMNEPHILUS



HELICOPSYCHE

STENOPHYLAX

BRACHYCENTRUS



A CADDIS FLY

PSILOTRETA

NEURONIA

GANONEMA

PHRYGANEA.

Wctd 10/36.

THIS POLLUTION PROBLEM

By P. G. PLATT, Member

Pennsylvania Sanitary Water Board; President, Delaware County Chapter, and National Director, Izaak Walton League of America

The Time—1936.

The Place—Pennsylvania.

The Audience—A group of public spirited civilians.

The Chairman—

WE have assembled to once again attack this problem of water pollution and, I hope, lay the foundation for the proper solution of the problem. I suggest that the meeting be in the form of a round table discussion, so let's draw up our chairs, place ourselves at ease and be prepared to produce some definite constructive thoughts. Before opening the meeting for general discussion, it might be well to go over the background of the problem and cite the events which have led up to this conference.

It does not require any stretch of imagination to picture the water resources of what is now America when the first white settlers arrived on its shores. Its resources of woods, waters and wild life were so stupendous as to appear inexhaustible. They were there for the harvesting. We can hardly blame our early forefathers for accepting these resources in that light. Little did they dream of conditions which would follow two hundred years later. The sparkling rivers which they knew, teeming with aquatic life, have now become literally biological deserts, incapable of sustaining aquatic life, a hindrance to navigation, a stench to the nostrils, a menace to health and an affront to civilization.

The blame for existing conditions cannot fairly be laid to any individual source. It is rather the result of an accumulation of shortsightedness of those who have used our waters. If we of this era had lived one hundred years ago we, no doubt, would have used these waters in the same way as did our ancestors. All of us are endowed with a great capacity for hindsight; foresight is indeed a rare attribute.

Most of us agree concerning the uneconomic and menacing stream pollution conditions as they exist. Unfortunately, too many accept the polluters' statement that stream pollution is one of the necessary evils of modern civilization. The latter statement is untrue and has been so demonstrated where sufficient mandate has been provided to correct the condition.

Here in Pennsylvania, the authority to abate stream pollution is vested in the Sanitary Water Board under the jurisdiction of the Department of Health. The limitations of this Board are such that comparatively little can be accomplished. It has authority to approve plans for municipal sewage collection and treatment. In cases where municipalities do not live up to their obligations the Board has the right to refer such cases to the Department of Justice, where it is occasionally found possible to enter suit and impose nominal fines. In the case of industrial pollution, the Board has no definite mandate other than to recommend that the Department of Justice file a bill in equity against such polluters.

The Conservationists of the State have for years endorsed a bill in Legislature which would empower local communities to bring action in the name of the Commonwealth for the abatement of stream pollution without being required first to obtain permission of the Attorney General or Sanitary Water Board. This Bill has been consistently defeated by the polluters. The chief objection has come from industry which states, "with the adoption and enforcement of such legislation you will immediately place Pennsylvania industry at an unfair competitive disadvantage with industries of states which permit the discharge of wastes into the waters of that state; furthermore, you will even force some of our industries to close down, thereby throwing many workers out of employment." To date this argument has carried sufficient weight with our industrially controlled legislature to block the passage of the Bill.

Another piece of legislation which was proposed by conservationists was directed at the polluter who actually kills fish by pollution. Our fish code provides for a penalty of $10.00 per fish killed through illegal methods or during closed season. The polluter who may kill fish by the thousands, however, is limited to a penalty of $100.00. Here is an instance of sudden pollution which occurred in Pennsylvania, the effect of which was felt in New York. Had the pollution occurred in New York the polluter would have been subject to a fine of $500.00, plus $10.00 per fish killed by this pollution. It is estimated that tens of thousands of fish were killed, yet New York was helpless because the pollution occurred in Pennsylvania. Our Bill providing for legislation similar to that of New York passed the House of Representatives last year but was defeated by the pollution controlled Senate. The polluters' argument against this Bill is utterly unsound, inasmuch as our major polluting industries are located on streams which are now so grossly polluted as to contain no aquatic life.

We must prevent a potential polluter from settling on the banks of a virgin, useful stream thereby adding one more biological desert.

When the Health authorities are called into action in cases of epidemics their first thought is to prevent a spread of contagion. We must adopt this policy in combating the spread of water pollution.

It has been the Chairman's privilege to have served on the Sanitary Water Board during the past year and a half. This Board has had, as long as I can remember, the finger of scorn pointed at it by both the conservationists and polluters. The conservationists have implied that the Board has been "reached by the polluters." The polluters have considered the Board in the capacity of "just a plain nuisance."

With existing mandate it is indeed a difficult problem for the Board to produce the desired results. Even with the maximum results possible, there would be a long interval before these would become visual. That some progress can be made is evidenced by recent developments on the Clarion River, that watershed which has so long been the object of the ire of true conservationists. The sources of pollution on this watershed have been a number of tanneries and one large paper mill. Through the concerted ac-

tion of the Board and the Department of Justice, all the tanneries on this watershed have complete plans and are either constructing or have completed waste treatment works. The paper mill which has been the largest contributor to the destruction of the Clarion has submitted to the Board plans and installation dates of a closed treatment works which should eliminate all vestige of pollution in the Clarion River when this program is completed, thereby reestablishing this stream to full usefulness.

Because of their location and great potential value for sources other than that of carriers of pollution, the Juniata and the Brandywine water sheds are now under a concentrated plan of redemption by the Board.

In view of the defeat of our anti-pollution bill, the Board concentrated its efforts on a program of stream redemption which includes the following:—

SEALING ABANDONED MINES. The acid waters rising from abandoned mines in the western part of the State is one of the most prolific and glaringly useless sources of pollution in that section. The Board, co-operating with the Department of Forests and Waters, Fish Commission, Bureau of Mines and Department of Justice, took advantage of available Federal funds to successfully conclude a major undertaking in this respect.

INDUSTRIAL POLLUTION. In view of the limited field personnel of the Sanitary Water Board, it worked out a program of cooperation with the Fish Commission whereby the latter's wardens were schooled in the details of stream inspection so they are now qualified to act in taking samples and reporting individual cases of contamination. This Board has abandoned its predecessor's policy of "constructive cooperation with industry." The engineers of individual industries are best qualified to solve their pollution problems. It is their responsibility.

SEWAGE POLLUTION. The Board made a concerted drive towards calling the attention of municipalities to the possibilities of financing sewage collection and treatment works with the assistance of Federal funds. Although there is no mandate by which was can force municipalities to accept the offered assistance, this action has resulted in amazing activity along these lines. Where the financial condition of municipalities would appear to permit them to proceed with the orders of the Board and these orders have been ignored, such cases have been referred to the Department of Justice for appropriate action.

Summing up the activities of the Sanitary Water Board under the present administration, it has been conclusively demonstrated that some progress can be made even under existing conditions. This progress is, however, too slow. You consider it too slow; we consider it too slow. We must look to more positive methods.

A group of far-sighted conservationists, led by Secretary of War Dern and Connecticut's Senator Lonergan, recognized this fact and last year called a conference to consider the matter of stream pollution from a national viewpoint. You are, of course, somewhat familiar with the details of this conference. You know that the fair minded advocates of orderly progress in stream purification proposed definite Federal control of the problem. You know that the polluters and the existing bureaucrats opposed such a suggestion. You know that the final decision of the conferees was in favor of the Bill which Senator Lonergan advocated.

The Lonergan Bill (Senate 3958) is the foundation for the most logical and orderly progress in stream purification which has ever been suggested in the Nation. It provides for the establishment of Sanitary Water Districts which will function on interstate navigable watersheds. Provision is made for investigation, experimentation, state cooperation, loans and grants and enforcement of rules adopted by the various districts. During the closing days of the last session of Congress, the Bill was favorably reported to the Floor of the Senate. It is now a live issue before the people of the Nation. The Bill has the unanimous endorsement of your Sanitary Water Board.

Conservationists are supporting the Bill, as it is fair, and if enacted, will bring results at the least cost to the polluters. Polluters are opposing it because of what they consider the almighty dollar involved in carrying out its mandate. They give no heed to the resources which they destroy in continuing pollution. The National cannot afford to leave the destinies of our waters in the hands of the plunderers of national resources who have found their personal gold supply enhanced at the expense of the peoples' rights. The Golden Rule is a foreign language to those who continue this revolting condition. The liquid between the river banks of most of our industrialized sections is no longer water in its strict sense, but a conglomeration of human excretia and industrial wastes. There is no reason why those below should be obliged to manufacture water from the wastes of those above, except that it is cheaper for those above to have it so arranged. There is a marked similarity between an interstate railroad system and an interstate river system. In the case of the former, shipments of cargo are regulated by the Interstate Commerce Commission; in the case of the latter, the law of gravity provides that the pollution cargo of a river be delivered to the lower community, all charges collect, without regard to man made political boundaries.

Men and women from all walks of life have an equal right towards an environment which is conducive to health. They also have an equal right to association with our woods, waters and wildlife. It should be a non-partisan issue. If we were to stop one million people on the street and ask them how they felt on the pollution problem, it is doubtful if as many as one hundred would attempt to justify existing conditions. It is equally doubtful if as many as one hundred would expend any energy other than a nod, towards correcting the condition. That is our real problem.

The recent statement of the National Resources Board says "IT IS NEEDED TO BRING ABOUT A PUBLIC REALIZATION OF THE FACT THAT CLEAN STREAMS REPRESENT AN ECONOMIC VALUE TO THE COMMUNITY WHICH WOULD MORE THAN OFFSET THE COST OF THE NECESSARY TREATMENT WORKS."

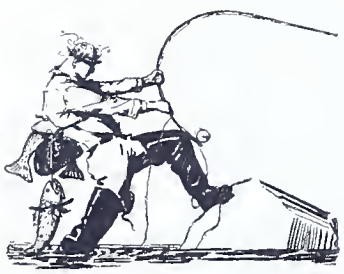
That, in a nutshell, is the real problem before this meeting. If we can devise some plan whereby our citizens will express themselves individually and collectively to their Representatives in Congress and in Legislature, the problem will be solved to our complete satisfaction.

It was my privilege to have been appointed by the conservationists of the State as chairman of a stream pollution committee. The other members of this committee are H. S. Smith of Wilkes-Barre, Earl E. Fisher of Sinking Spring and Roland S. Grubb of West Chester. This Committee has, at this writing met only once. It recommends reintroduction of our Pure Streams Bill of the last session as well as the Bill which provides for suitable penalties for killing fish by pollution. It also recommends amendment to existing laws which would make it possible for the Sanitary Water Board to prohibit new industries from operating unless adequate provisions were made for the disposal of their wastes. It is hardly necessary to add that your Committee unanimously endorses the Lonergan Bill. The Committee is opposed to the Shapiro Bill of last session which provided for the classification of streams. We do not feel that it would be in accordance with American traditions to legally condemn any water-course as an open sewer. The Committee itself is small. We propose to act in an executive capacity and ask for volunteers to expand the committee as a whole into a State-wide body which will actively participate in a campaign to awaken public sentiment in favor of pure streams.

The meeting is now open to round table suggestions for methods of having the public express itself. Your suggestions will be most welcome.

GET A REPUTATION

By FRED EVERETT



THE big inspiration hit me about New Year's day and I resolved a resolution right on the spot. I was going to get me a reputation!

With which decision I leaned back in my chair, closed my eyes and dreamed visions of a future in which my name was emblazoned across a brilliant Izaak Walton sky, in company with those other great names so dear to us. It was a rosy future which quickened my pulse and made me tingle with anticipation.

As I look back on that time, out of the eyes of vast experience (a whole season) I wonder how much of my inspiration was due to the clutter of outdoor sports magazines I had been reading. That was a minor detail which didn't enter my head at the time.

All ordinary humans make resolutions on New Year's but have their inspirations in the spring. Only a very select group is capable of doing both on New Year's and I was thrilled with the knowledge that within a heartbeat I had graduated from the ordinary into the select. I was one of them and already I was beginning to feel at home in the atmosphere of their exclusive world. As I walked about my studio I added a little swagger to my gait and talked (to myself) in a sort of superior way. If I were to get a reputation I might just as well start right in!

The select group is from three to four months ahead of the ordinary human. For its members, spring begins about the first of the year and they start dreaming, planning, resolving and having inspirations for what they will do when spring actually arrives. When it does come, they lay aside idle thoughts and are out whipping the streams. They are trout fishermen in the higher meaning of the word—fly fishermen. And I was one of them—that is, insofar as my resolutions could make me one.

Now that my mind was made up, it would be a cinch. I had it all planned out in no time at all. I'd get me one of those cut or split (I wasn't sure of the word) bamboo poles—a real expensive one of about, say—ten or twelve dollars. And a good line, an enameled one that would float if you put some dressing on it. I'd have to ask about the dressing—what kind to use and how. I could pick up a cheap reel and then there were the long pieces of gut which were called leaders. I knew what they were because I had used hooks with pieces of it on them.

You see, I was an old hand at trout fishing—I always caught good messes on worms each spring up to the time it got warm and the "punkies" got bad. Then I quit. But this year it would be different. I was a real fisherman. No worms for me, unless, maybe, the first few days. And my old steel pole, casting reel and silk line were taboo—I was going to start right in with a regular outfit. Only dubs like worm fishermen ever used the other kind. We fly-fishermen were particular—we were sportier and gave the fish a chance with our light poles and weak leaders. That was the way to get a reputation.

Then there were the flies. Dry flies and wet flies. I didn't know the difference except that the wet flies had pieces of gut on them while the dry flies didn't. You had to tie them on your leader some way. I had another inspiration—I'd go over and ask a certain friend who already had a rep. He'd tell me. And he'd probably advise me on all my outfit. I'd get started off on the right foot and make a rep for myself in no time at all!

It happens that he and I live in the same town and have been friends for years. I had always understood that he was considered one of the top-notchers among fly-fishermen but until now it had never meant much to me nor impressed me. But now—ah—he loomed up as a very dear old friend and I really ought to go over and make a friendly call—just to say hello you know. Then, if the talk happened to get around to fishing I could ask a few questions. You couldn't tell, he might even suggest that I go fishing with him in the spring—if I hinted strongly enough.

If he did that, I'd get my pole right away and practice a couple of times, say an hour or so, so that I would be able to cast my flies at least as well as he did, and he wouldn't think me a dub. Then, as the season went along, I'd give him a run for his money. The outlook for my reputation was rosy.

I waited as long as I could—nearly ten minutes—and then started over to his house. Things worked great up to a certain point. We talked fishing and that was fine. We talked tackle and that wasn't so good. I *could* get a pole—excuse me, from now on I have to practice saying "rod," not "pole." The fly-poles—I mean fly-rods are "Rods" in the select group. My old steel rod is a "pole" and a split bamboo pole is a "rod," or—well—the expensive ones are rods and the cheap ones, poles. And, as I started to say—I could get a rod or pole for ten or fifteen dollars that would be fine to practice with and would last a year or so, but if I wanted the real thing, one to last a lifetime and with the right kind of pep, vim and vigor, I ought to pay from thirty-five to fifty dollars.

I guess that the look which came over my face at that news struck a tender spot in my friend's heart because he loaned me an old one of his. He said it cost some fifty-odd dollars. When he handed it to me I accepted it with fearful respect. It was so light in comparison to what I was used to that I had to hold it down so it wouldn't float to the ceiling. He said it weighed about three ounces. Oh boy! What a pole—rod!

Before I left I was outfitted with everything but a line and reel. A nice assortment of flies, leaders, etc., and what was more to the point, plenty of sound advice and a promise of a trip in the spring. I walked home on air. If I couldn't make a reputation now, nobody could. I was a select among the select!

About ninety-nine years later March came and finally the tackle stores came out of their hibernating and displayed their goods. The first day I had a line and reel. They were both cheap—not at all in keeping with the rest of the outfit. That is what I get for being poor.

Home I rushed, assembled my rod, line, reel and leader and tied on a wet fly. Out to the back yard I hurried, measured off about fifty feet and made a small mark with a tin can on the snow. I thought I'd begin modestly and not cast seventy-five or a hundred feet until I got used to the rod. Then I set myself and started casting.

Only members of the select group will appreciate the next hour. Let me give a few of the details so that the outsiders may have an inkling of the first hundred miles on the road to a reputation. (To date, I think I have traveled about the first mile—and they say the first hundred are the hardest.)

To begin with, I pulled out about fifty feet of line so that I would have enough to reach my target. This I carefully laid on the snow from the target to my casting position. I tested the frail little rod and wondered just how much it would take to snap it in two. I reeled in a little of the line so that I wouldn't strain the rod. Then I gave a quick little flip of the end of the rod in order to throw the line in back of me and another forward flip to throw the line at the target. My intentions were of the best, the trouble was in the execution of them. On the back flip a loop of line jumped into my face, slid through one eye and nestled lovingly around an ear. On the forward flip, two more loops started a necking party with me. The rest of the line was rolling around on the snow in evident glee at sight of me and ended in a beautiful tangle.

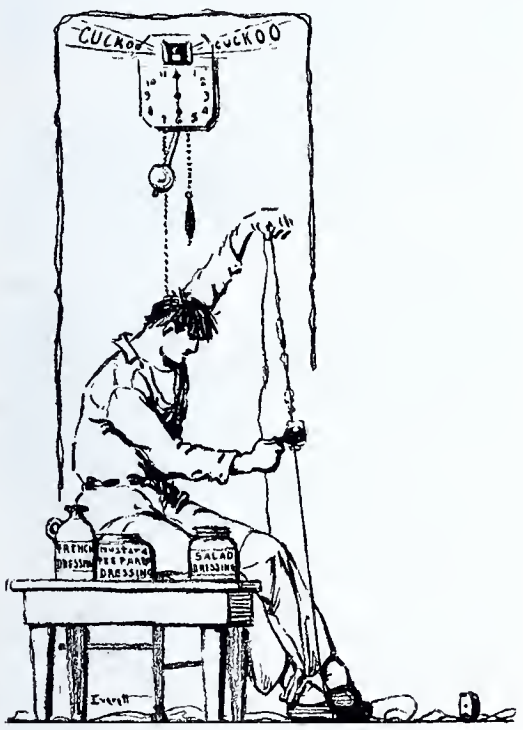
I guess I had a little too much line out or I hadn't handled it right. So I reeled in some more, after I had freed myself, and tried all over again with about forty feet of line. This time I did better. That is, instead of winding the part of the line up near the tip of the rod around my face, I wound the middle of it around my neck and legs. That was progress and I was on the right track.

I had a system now. With each attempted cast I reeled in more line and each time I got tangled up nearer to the end of the line. As yet I didn't trust the rod and my flips of it were pretty weak. It didn't break and I was satisfied that I wasn't handling it too roughly.

Finally I had only about fifteen feet of line out and with my first flip of the rod I got all of the line and the leader in back

of me. It would have been a complete success only my hat got in the way of the fly. I still had the original fly although I had had to cut it out of my sweater and hat a half dozen times. I vowed that I would invent an all-metal suit and hat as a protection against this very thing. As a saver of time and nerves it would bring me a fortune from the grateful beginners. Anyhow, I was getting the hang of the thing. I hadn't broken anything and only had five knots in the line and leader that I couldn't get out easily.

At ten feet the line, the leader and fly went behind me and came most of the way back. That fly seemed to have an affinity for the rod tip from that moment on. It would spat against the tip, spin with great joy and then I'd have to untangle fly, leader, line and rod. I couldn't for the life of me figure out how the fly and leader could tie themselves around the rod and line in such fancy, unsolvable knots. I used up most of the leader, cutting it loose and retying the fly on again. On the spur of the moment



I couldn't think of any invention that would prevent this.

About half an hour had passed before I found that I could flip my rod with a slightly rotating motion, just off center, and this would make the fly clear the rod nicely. Now I was all set and could aim at my target. I did so with renewed courage. I gave a stronger flip to the rod and snapped the line at the spot in the snow. "Crack" it said, behind me. The leader landed softly on the snow about three feet in front of me. The fly was gone. I tied on another and repeated the cast. Each time there was that sound so much like one makes when cracking the whip. After two or three cracks my fly would be gone.

I think that about seven flies went the way of no return when I had a bright idea —two of them to be exact. First, I would tie a piece of cloth on the leader in place of a fly and second, I would forget about the target for awhile and aim at the side of the house until I could cast the line without snapping it. Here was progress—sort of mind over matter. (Later I cut the points off of old flies for such use—it kept the fly from snagging anything and made a well balanced practice outfit. It made the all-metal suit invention unnecessary and lost me the fortune.)

Soon I was snapping that old line back and forth like a veteran. The rod didn't seem so frail to me now and I was putting some real pep into the process. I was using a free arm style, snapping with arm, wrist and all. The surprising part of it was that once in a while I made a whole cast; forward, backward and forward again without a single snap at each change of direction. I was getting good. And I had let out more line until I had almost twenty-five feet flying through the air. About then my arm and wrist gave out and I decided to rest.

When the line fell to the snow, I took a look at it. Right there I got another surprise. The piece of cloth was gone. So was the leader and goodness knows how much of the line. The end of what was left was frayed like the end of a buggy whip. And for about eight feet the line was full of nice, tight little knots and in between these the enamel was cracked all the way through. I cut off the eight feet, charged it to experience and decided to call it a day. I also changed my mind about practicing for an hour or so in order to cast as well as my friend. A few years seemed a better program.

There were many hours like the first, each one a shade better, until I could keep a fly on during the whole battle and make it hit the pool in my yard every now and then. During this period I tried to forget the reputation I was going to get; I thought it better to keep my mind on the job in hand.

As all months have a habit of doing, March finally came to an end. So, also, did my flies and leaders. All I had left were a couple of hooks with frayed pieces of feathers on them that had once been beautiful Royal Coachmen or some such thing. And I had about three sections of one leader. But think of the experience I had gained! I sighed and went to the store to replenish my kit.

Opening day came and daybreak found me and a friend dangling worms over favorite spots. It was too early for flies and well—one can't break a habit all at once. You have to stop gradually, like smokers and drug fiends, you know. Next year I wouldn't use worms—or, anyway, the year after that. It's too bad flies can't be used around here at the beginning of the season.

May came and so did the promised trip with the expert fisherman. Now for my reputation!

We headed for the Neversink to a posted place where my friend was welcome. Here was to be the beginning of my initiation into the select. And on one of those dreamed-of streams of which I had read and visioned so much.

At the last moment I grew doubtful. My friend had already shown me how to dress the line with the prepared dressing so that it would float. And how to tie my flies and oil them so that they would ride high and handsome. But I wanted to cast those first few flies by myself. It didn't seem quite the same here on the stream as it did in my backyard. I slipped away to a secluded spot.

As I walked I worked my line and fly over my head in real, old-timer style. I'd show him that I knew how to handle the line. With my eye on the line overhead, I stepped into a hole and splashed down onto my hands and knees. Thank heaven it wasn't very deep there and I didn't lose any of my outfit. After that I carried the rod and line at my side, until I was ready to use them. I'd show off some other time.

I found a nice hole and started casting. The first time my fly grabbed the tip of the rod on the back cast. The second time it landed on the rock to the side of the water where I was aiming. The third time it landed in the water on its back; the current caught the line and dragged the fly off to the side. That was not so good and I decided to shift my position a little.

I kept at it. Either the fly persisted in riding down the current on its wings or the current pulled it in circles or both. And then something happened. A gust of wind took the fly to a spot I had not reached be-

fore—it landed right side up, rode beautifully a few inches and splash! My heart jumped up against my front teeth.

A beauty (I knew it must be at least a two-pounder) had hit the fly and I hit back, about twice as hard. My line flew back over my head without my feeling a thing. A strike—my first one on a fly—and I had missed it!

"You struck too hard and left the fly in its mouth," said a calm voice behind me. I turned around, flushed with chagrin, to see my friend standing there. He had been watching me all this time and what a dub show I had given him.

"Gosh, he was an old socker!" I said, gathering in my line to cover up my embarrassment.

"Yeah—about eight or nine inches," he grinned.

"Say, my fly is still here and the hook is broken off," I exclaimed as I reached the end of my line. "How could I break the hook on such a small fish as you say it was? It must have been a big one."

(Continued on page 18)

BASS STOCKING REACHES PEAK

BASS distribution by the Fish Commission reached a peak during the month of September with 142,656 bass ranging in size from 1½ to 12 inches, placed in the various streams throughout the state. Other species distributed included: 6,920 brown trout, 10 inches in size; 10,860 brook trout, 7 to 9 inches in size; 2,360 rainbow trout, 7 to 12 inches in size; 1,000 embryo frogs; 28,460 catfish, 2 to 9 inches; 71,410 sunfish, 1 to 8 inches; 27,400 yellow perch, 3 to 10 inches; 18,650 minnows, 2 to 3 inches; 492 pickerel, 8 to 14 inches; and 40 muskellunge, 10 inches in length, making a grand total for the month of 316,628 fish of the various species. Waters stocked in the various counties include:

ADAMS—bass, Conewago Creek, Marsh Creek, Bermudian Creek; suckers, Conewago Creek.

ALLEGHENY — sunfish, Glen Willard Dam, Trees Boys Club Pond, Clinton Lake; catfish, Clinton Lake, Glen Willard Dam, Trees Boys Club Pond.

ARMSTRONG—bass, Allegheny River.

BEAVER—bass, North Fork of Little Beaver Creek; sunfish, North Fork of Little Beaver River, Brush Creek; catfish, North Fork of Little Beaver River, Brush Creek.

BEDFORD — bass, Raystown Branch Juniata River, Gordon Lake, Wills Creek, Dunnings Creek; brown trout, Cumberland Valley Run, Wills Creek; brook trout, Bobs Creek; sunfish, Gordon Lake, Thos. W. Koon Lake; catfish, Thos. W. Koon Lake, Gordon Lake.

BERKS — bass, Maiden Creek, Monocacy Creek, Ontelaunce Lake, Manatawney Creek, Tulpehocken Creek; sunfish, Maiden Creek, Ontelaunce Lake, Antietam Lake; catfish, Maiden Creek, Ontelaunce Lake, Antietam Lake; minnows, Ontelaunce Lake; yellow perch, Ontelaunce Lake, Antietam Lake.

BLAIR — bass, Williamsburg Dam on Frankstown Branch, Frankstown Branch Juniata River; brook trout, Bobs Creek.

BRADFORD—bass, Sugar Creek, North Branch Susquehanna River; sunfish, North Branch Susquehanna River, Sugar Creek; minnows, North Branch Susquehanna River, Sugar Creek.

BUCKS—bass, Neshaminy Creek, Delaware River, Tohickon Creek, East Swamp Creek, Warren Lake, Northeast Branch Perkiomen Creek, Little Neshaminy Creek; sunfish, Silver Lake, Maple Beach Pond, Little Neshaminy Creek, Northeast Branch Perkiomen Creek, Warren Lake; catfish, Silver Lake, Maple Beach Pond, Little Neshaminy Creek, Northeast Branch Perkiomen Creek, Warren Lake; minnows, Warren Lake; yellow perch, Warren Lake, Silver Lake.

BUTLER—bass, Wolf Run, Buffalo Creek, Boydstown Dam, Glade Run, Thorn Run Dam, Oneida Dam; brown trout, Bear Creek, Silver Creek; sunfish, Oneida Dam, Thorn Run Dam, Buffalo Creek, Boydstown Dam; catfish, Oneida Dam, Thorn Run Dam, Buffalo Creek, Boydstown Dam; yellow perch,

Cecil Smith of Athens With a Catch of North Branch of Susquehanna Smallmouth Bass—Largest Bass 19 Inches

Thorn Run Dam, Boydstown Dam, Oneida Dam.

CAMBRIA—brown trout, Chest Creek; catfish, Slatelick Creek; yellow perch, North Branch Little Conemaugh Creek.

CARBON—bass, Mahoning Creek; sunfish, Pohopoco Creek, Lizard Creek, Kittaotiny Pond; catfish, Pohopoco Creek, Lizard Creek, Kittaotiny Pond; yellow perch, Little Gap Ice Dam on Buckwa Creek.

CENTRE—bass, Moshannon Lake, Bald Eagle Creek; brown trout, Elk Creek; sunfish, Moshannon Lake; catfish, Moshannon Lake; yellow perch, Moshannon Lake; pickerel, Moshannon Lake.

CHESTER—bass, West Branch Brandywine Creek.

CLARION—bass, Allegheny River, Mill Creek, Piney Creek, Red Bank Creek, rainbow trout, Deer Creek; catfish, Red Bank Creek; frogs, Red Bank Creek.

CLEARFIELD—bass, Sandy Lick Creek.

CLINTON—bass, Kettle Creek, Bald Eagle Creek, Pine Creek; suckers, Fishing Creek; yellow perch, Beach Creek.

COLUMBIA—bass, Huntingdon Creek, Fishing Creek; sunfish, Huntingdon Creek; catfish, Huntingdon Creek.

CRAWFORD—bass, French Creek, Pymatuning Reservoir, Conneautee Lake, Canadohta Lake, Clear Lake, Sugar Lake, Oil Creek, Muddy Creek, Cussewago Creek, Conneautee Creek; sunfish, French Creek; catfish, French Creek; minnows, French Creek; yellow perch, French Creek.

CUMBERLAND — bass, Carlisle Water House Dam on Conodoguinet Creek, Conodoguinet Creek; brown trout, Letort Springs Run; brook trout, Big Springs; sunfish, Susquehanna River, Fullers Lake, Mountain Creek; catfish, Susquehanna River, Fullers Lake, Mountain Creek; yellow perch, Carlisle Water House Dam on Conodoguinet Creek, Yellow Breeches Creek.

DAUPHIN — bass, Susquehanna River, Wildwood Lake, Conewago Creek, Swatara Creek; yellow perch, Wildwood Lake.

DELAWARE—bass, Darby Creek, Chester Creek; catfish, Leiper Quarry Hole No. 1 and 2.

ERIE—bass, French Creek, South Branch French Creek, West Branch French Creek, Conneaut Creek; rainbow trout, Beaver Run; muskellunge, Lake LeBoeuf.

FAYETTE—bass, Lower Star Junction Dam, Cool Springs Reservoir, Brownfield Dam, Smock Reservoir, Layton Reservoir, Indian Creek; sunfish, Crystal Reservoir, Brownfield Dam, Cool Springs, Lower Star Junction Dam, Smock Reservoir, Layton Reservoir; catfish, Crystal Reservoir; yellow perch, Crystal Reservoir.

FOREST—bass, Allegheny River.

FRANKLIN—bass, Conodoguinet Creek, Licking Creek, Conococheague Creek, West Branch Conococheague Creek; brown trout, West Branch Conococheague Creek; yellow perch, Goods Dam on Little Antietam Creek, Indian Lake.

FULTON—bass, Licking Run.

GREENE—bass, North Fork Wheeling Creek, Pennsylvania Fork Fish Creek, South Branch Ten Mile Creek, South Fork of Dunkard Fork Creek, Whiteley Creek, Wheeling Creek.

HUNTINGDON — bass, Frankstown Branch Juniata River, Raystown Branch Juniata River, Sideling Hill Creek, Aughwick Creek, Penn Central Dam on Raystown Branch, Penn Central Dam on Frankstown Branch, Standing Stone Creek, Juniata River; brown trout, Spruce Creek; brook trout, Little Aughwick Creek, Licking Creek; rainbow trout, Shavers Creek.

INDIANA—bass, Yellow Creek, Little Mahoning Creek.

JEFFERSON—bass, Little Sandy Creek, Red Bank Creek; catfish, Little Sandy Creek, Red Bank Creek.

JUNIATA—brown trout, Licking Creek, brook trout, Licking Creek; bass, Tuscarora Creek, Juniata River.

LACKAWANNA — sunfish, Chapman Lake, Deer Lake, Baylors Pond, Sickler Pond, Sheridan Lake; catfish, Baylors Pond, Chapman Lake, Deer Lake; minnows, Sheridan Lake; pickerel, Sicklers Pond, Sheridan Lake.

LANCASTER—bass, Susquehanna River, Conestoga Creek, Conowingo Dam on Susquehanna River, Safe Harbor on Susquehanna River, Big Chickies Creek, Conowingo Creek, Octoraro Creek, Wengers Mill Dam on Conestoga Creek, Middle Creek, Cocalico Creek, Muddy Creek; suckers, Safe Harbor Dam, Conowingo Dam.

LAWRENCE—bass, Neshannock Creek, Slippery Rock Creek, North Fork Little Beaver River, Honey Creek, Shenango River; brook trout, Taylor Run, Big Run.

LEBANON—bass, Little Swatara Creek, sunfish, White Quarry Hole, Strauss Dam, Lights Dam, Stovers Dam; suckers, Little Swatara Creek.

LUZERNE—bass, Harveys Lake; sunfish, Sylvan Lake, Nuangola Lake, Harveys Lake; catfish, Harveys Lake, Sylvan Lake; minnows, Harveys Lake.

LYCOMING—bass, Pine Creek, Loyalsock Creek, Muncy Creek, Lycoming Creek.

McKEAN—brook trout, Five Mile Run, Clarion Creek; bass, Allegheny River.

MERCER—bass, Shenango River, Neshannock Creek, Sandy Lake, Sandy Creek, Pymatuning Creek; brook trout, Lackawannock Creek, West Branch Wolf Creek; sunfish, Otter Creek, Cool Spring Creek, Neshannock Creek, Little Shenango River, Wolf Creek, West Branch Wolf Creek, Sandy Creek; yellow perch, Wolf Creek, West Branch Wolf Creek; catfish, Otter Creek, Cool Spring Creek, Neshannock Creek, Little Shenango River, Wolf Creek, West Branch Wolf Creek, Sandy Creek.

MONROE—bass, Delaware River.

MONTGOMERY—bass, Northeast Branch Perkiomen Creek, East Swamp Creek, Manatawney Creek, Pennypack Creek, Ridge Valley Creek, Northwest Branch Perkiomen Creek, Skippack Creek, Perkiomen Creek; sunfish, East Swamp Creek, Gulf Mill Creek, Wunderle Quarry Hole, Northwest Branch Perkiomen Creek; yellow perch, East Swamp Creek, Gulf Mill Creek; catfish, East Swamp Creek, Gulf Mill Creek, Wunderle Quarry Hole, Northwest Branch Perkiomen Creek.

NORTHAMPTON—bass, Delaware River.

NORTHUMBERLAND—sunfish, Chillisquaque Creek, Warrior Run; catfish, Chillisquaque Creek, Warrior Run.

PERRY—bass, Buffalo Creek, Weavers Dam, Bairs Dam on Shermans Creek, Susquehanna River; brown trout, Little Juniata Creek; brook trout, Shermans Creek, Horse Valley Run; suckers, Little Buffalo Creek.

PHILADELPHIA—sunfish, League Island Lake, Chamoniux Lake; catfish, League Island Lake, Chamoniux Lake.

PIKE—bass, Delaware River, Lake Wallenpaupack; sunfish, Egypt Meadow Dam, Fairfiew Lake, Forest Lake, Lake Wallenpaupack; catfish, Egypt Meadow Dam, Fairview Lake, Forest Lake, Lake Wallenpaupack; yellow perch, Egypt Meadow Dam; pickerel, Egypt Meadow Dam, Lake Wallenpaupack; minnows, Fairview Lake, Egypt Meadow Dam, Lake Wallenpaupack.

POTTER—bass, Oswayo Creek.

SCHUYLKILL—sunfish, Coney Island Dam; catfish, Newfoundland Pond, Coney Island Dam; bass, Mahoning Creek, Little Swatara Creek.

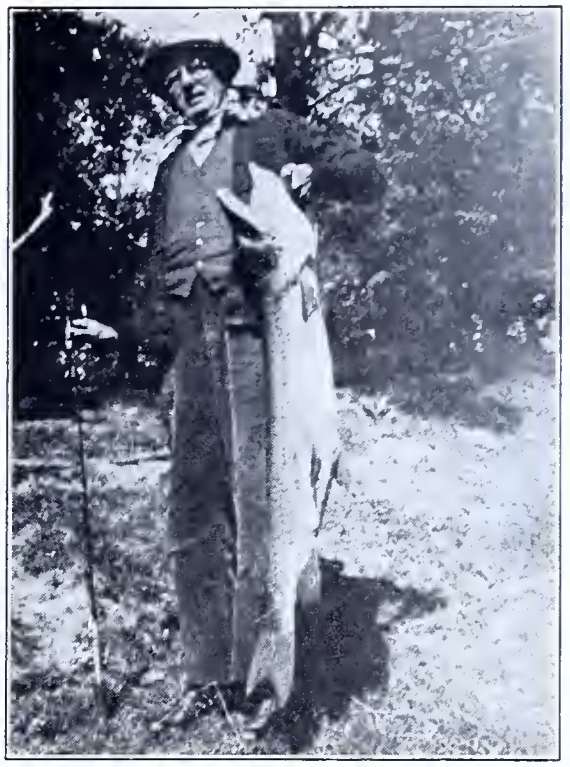
SNYDER — bass, Mahantango Creek, Penns Creek; sunfish, Harold Mill Dam on Penns Creek; catfish, Penns Creek; minnows, Penns Creek; suckers, Middle Creek.

SOMERSET—rainbow trout, Laurel Hill Creek, Kooser Lake on Kooser Run; bass, Youghiogheny River.

SULLIVAN—sunfish, Rouch Lake, Painters Den Pond; catfish, Rouch Lake, Painters Den Pond.

SUSQUEHANNA—bass, Tingley Lake, North Branch Susquehanna River; sunfish, Forest Lake, Quaker Lake, Comfort Pond, Heart Lake, Montrose Lake, Wrighters Lake; catfish, Idlewild Lake, Forest Lake, Montrose Lake, Heart Lake; minnows, Forest Lake, Quaker Lake, Comfort Pond, Wrighter Lake; pickerel, Wrighter Lake, Quaker Lake, Forest Lake, Idlewild Lake.

TIOGA—brook trout, Bailey Creek, Seeley Creek.



George W. Scott of Coraopolis, An Ardent Conservationist, With 50-inch Muskie Caught This Summer

UNION—bass, Penns Creek, White Deer Hole Creek; sunfish, Laurel Pack Dam on Penns Creek, New Berlin Dam; catfish, Laurel Pack Dam on Penns Creek, New Berlin Dam; yellow perch, Laurel Pack Dam on Penns Creek, New Berlin Dam.

VENANGO — bass, Allegheny River, French Creek, Sandy Creek; brook trout, Hemlock Creek; catfish, Allegheny River.

WARREN—bass, Allegheny River, Columbus Pond, Conewago Creek; brook trout, Four Mile Run.

WASHINGTON—bass, Little Chartiers Creek, Cross Creek, Buffalo Creek, Ten Mile Creek.

WAYNE—bass, Delaware River, Lackawaxen River; sunfish, Waidler Pond, Upper Twin Lake, Goose Pond, Poyntelle Lake, Coxton Lake, Island Lake, Como Lake, Lower Twin Lake, Henry Lake, Duck Harbor Pond, Shehawken Lake, Cadjaw Pond; catfish, Goose Pond, Shehawken Lake, Island Lake, Como Lake, Cadjaw Pond; yellow perch, Poyntelle Lake, Waidler Pond, Goose Pond, Island Lake, Henry Lake, Duck Harbor Pond; minnows, Lower Twin Lake, Upper Twin Lake, Goose Pond, Shehawken Lake, Como Lake, Coxton Lake; minnows, Henry Lake, Duck Harbor Pond; pickerel, Duck Harbor Pond, Henry Lake, Lower Twin Lake, Upper Twin Lake, Goose Pond, Shehawken Lake, Island Lake, Coxton Lake.

WYOMING—bass, Tunkhannock Creek, North Branch Susquehanna River; sunfish, Edinger Pond, Chamberlain Pond, Nigger Pond, Carry Lake, North Branch Susquehanna River; catfish, Edinger Pond, Chamberlin Pond, Nigger Pond, Carry Lake, North Branch Susquehanna River; minnows, North Branch Susquehanna River.

YORK—bass, Susquehanna River, Bermudian Creek, Conewago Creek, Little Conewago Creek, South Branch Conewago Creek; sunfish, Little Conewago Creek; catfish, Wrightsville Quarry Hole, Broad Water Lake, Little Conewago Creek.

KILL 108 SNAKES IN CONTEST

The Georges Creek Sportsmen's Club, Springhill Township, Fayette County, closed a successful snake control contest, which covered the period from May 20, 1936, to October 20, 1936. One hundred eight water snakes were killed by various club members. The contest was inaugurated to destroy the watersnakes in trout streams in the vicinity, but numerous copperheads and blacksnakes were also destroyed along the mountain streams.

The rules of the contest required that four inches or more of tail from each snake be submitted to the Snake Control Committee for verification. As an award for killing the greatest number of watersnakes, the winner of the contest received a prize of four dollars in fishing equipment. J. Russell Brady, Smithfield, won the award with a record of 52 watersnakes killed.

TROUT STREAM INSECTS

(Continued from page 4)

to twenty days and this is almost exclusively the period of reproduction.

Trout flies representing the caddis fly group are invariably the most successful when fished wet, mainly because of the prototypes habit of crawling under the water to lay its eggs. Like the natural insect, the artificial should be dressed with wings sloping down over the body—a true position, and again, one that is most successful in the wet fly, since it is a difficult matter to properly balance a floating imitation with the wings arranged as on the natural insect.

"FRIENDS OF THE BRANDYWINE"

The historic Brandywine Creek, East and West Branches, which eventually empties into the Delaware River in the state of Delaware, and which circles in the agricultural and wooded lands in Chester County, is receiving considerable attention these days. In a number of towns, industry uses the water, but unfortunately it is not returned in the same condition. Until recently some of the larger municipalities have been emptying their sewage into Brandywine Creek.

Petitions are now in circulation in Chester County to clean up the Brandywine under the caption:—"Friends of the Brandywine," sponsored by Mr. Joseph Webb, a West Chester attorney, who is working on the plan to have one of the most picturesque streams in the State made pure, not only for fish life, but in behalf of land owners abutting on that creek in the interest of health both for man and beast. The petitions are being signed by numbers of persons in that vicinity.

The Philadelphia Y.M.C.A. Outing Camp, a tract of 300 acres, near Downingtown, a short distance from the Brandywine Creek, is also enthused about the movement, so much that if the stream can be freed of pollution, the officials plan to seek Federal aid to make the creek suitable for canoeing and bathing. A big dam is the thought of the Christian Association of Philadelphia.

THE OLD TIMER ON FISHING

What do I like? I'll tell you, lad,
Of the finest sport I know
Standing knee-deep in a rippling stream
Where the vagrant breezes blow
With a rod and line the world is mine
Where the singing waters flow.

When do I fish? I'll tell you, lad,
A sunny day is fine
Droning bees in the heavy air
Make for a running line
And the rush of the reel is all I feel
When a black bass takes the line.

Only on sunny days, you ask? Shucks, no,
I've had them bite
When the wind was blowing a stiff nor'west
And the rapids were running white.
For any old day is a fisherman's way
When the big black bass will bite.

And it isn't the fish you get, my lad,
Nor the big one that got away
But the joy and peace of wind and stream
That make a fisherman's day.
For the reel and the rod are gifts of God
To the man who has learned to play.

—Katherine M. Choby.

YORK AND ADAMS MEN PLANT FISH

According to word received from special fish warden J. R. Stover, at Hanover, members of the York and Adams County Game and Fish Protective Association of that place have been active throughout the past summer in stocking many of the streams in York and Adams Counties, with fish. Mr. Stover, who also serves as chairman of the organization's fish committee, reports that members of the association recently transferred approximately 7,000 young bluegill sunfish, 1,000 catfish, and a large number of suckers and minnows from their two rearing ponds located on the H. M. Bowersox and H. A. Sell farms, near Hanover.

The Bowersox Pond was constructed three years ago by members of the association, and has been in operation for one year. More than 2,000 young bluegill sunfish were taken from it this year for stream stocking.

In addition to stocking fish of their own hatching, the association, this year, received twelve truck-loads of game and other species of fish from state fish hatcheries for stocking. The approximate number of fish received and the bodies of water stocked are as follows: 54,000 yellow perch fry, Bermudian Creek, Big Conewago (York and Adams Counties), Little Conewago (Adams County), Keagy's Lake (York County); 4,000 smallmouth bass, Little Conewago (York County); 2,000 bluegill sunfish, Little Conewago (York County); 1,000 brook trout, fingerling, tributary streams to Big Conewago in Adams county; 560 adult rainbow trout, Haldemann Lake (York County).

Fish committee members, and others who assisted in distributing the first included: George H. Hartman, president, Dean C. Zartman, secretary, H. Merle Stokes, H. Merle Stokes, Jr., Benjamin Witmer, Raber C. Sell, Harry Reed, John Husson, Willard Starner, Claude Dubbs, Paul Crawford, Myrl Crawford, Robert Burger, Roy H. Stover and J. Richard Stover, all of Hanover. Committee members, who took charge of planting water grasses in Keagy's Lake, Haldemann's Lake and the association's fish rearing ponds were: Stanford Mummert, Earl Garvick, and William Mummert.

The association's annual contest to stimulate interest in fishing will be concluded November 30th. Prizes of fishing tackle will be awarded for fish of the following species: brook, brown and rainbow trout, largemouth and smallmouth bass, rock bass, bluegill sunfish, pike, carp and catfish. Fish must be weighed and measured at the Hanover Hardware Company or Samuel Shirk and Sons Hardware Store, Hanover.

Seagulls are recognized as true weather prophets by the U. S. Weather Bureau. When the birds fly inland, a storm is very sure to ensue shortly.

NORMAN WOOD RETIRES

NORMAN M. WOOD

Norman Wood, of Coatesville, recently retired from active duty with the Game Commission after twenty-one years of active service. During these years, Mr. Wood has met with and contacted possibly more sportsmen than any other individual in the state. He was engaged in educational work for the Game Commission, in lecturing and showing moving pictures of the activities of the Commission. This work brought him in contact with most of the organized sportsmen of the state, civic clubs, and organizations and hundreds of high schools.

Mr. Wood unselfishly preached the whole program of Pennsylvania conservation in a most intelligent and convincing manner, and always conducted himself like the gentleman he is. We understand he is going to continue the same kind of work for "Field and Stream" magazine, and I am sure his friends will wish him every success in this work he loves so well.

SPONSOR PROGRAM

The Westmoreland County Sportsmen's Association, in conjunction with Radio Station WHJB, Greensburg, is sponsoring the following program every other Saturday from 11:45 to 12:00 noon.

Sportsmen's Organizations, October 31, 1936
Harry Soles, President Westmoreland County Sportsmen's Association

Small Game in Pennsylvania.....November 14, 1936
Rollin Heffelfinger, Division "G" Game Supervisor

Big Game in Pennsylvania.....November 28, 1936
Ray McKissick, Game Protector

Wild Life Conservation..December 12, 1936
Welty Dom, Vice-President, Westmoreland County Sportsmen's Association

Food and Shelter for Wild Life.....December 26, 1936
I. G. Moyer, President, Jeannette District Sportsmen's Association

The Game Refuge.....January 9, 1937
William Matthews, Refuge Keeper

Pennsylvania Game Farms.....January 23, 1937
Ross Leffler, Member, Board of Game Commissioners

Stream Pollution.....February 6, 1937
R. W. Hanson, Chairman, Laurel Hill Trout Nursery Comm.

Pennsylvania Fish Hatcheries.....February 20, 1937
O. M. Deibler, Commissioner of Fisheries

Bird Life.....March 6, 1937
W. M. Wright, Retired Division Game Supervisor

Pennsylvania Forests.....March 20, 1937
V. M. Bearer, Department of Forests and Waters

Pennsylvania Fishing Streams.....April 3, 1937
Sam Henderson, Fish Warden

WHO CAUGHT THIS ONE?

Warden Charlie Long of East Waterford is still trying to find out the name of the angler who recently, while bait casting in Sherman's Creek, near Shermansdale, Perry County, caught a smallmouth bass 20 inches in length and weighing 4 pounds 4 ounces. The angler, according to H. R. White, proprietor of the "Bob White Inn" at Shermansdale, brought the big fellow to his place for weighing, but did not leave his name. He told White that he was just about ready to quit fishing when he saw two big bass dart from grass at the shoreline into deeper water. A few casts yielded a strike and the big fish. Asked why he didn't try for the other whopper, the angler's reply was that he had had sport aplenty for one day with the bass he landed, so he left the other one for some fellow fisherman to catch.

Sherman's Creek this year has been producing some fine smallmouth fishing. Skinny Skiminski of Minersville, writes Long, had a day's catch of four bass from 11 to 17 inches in length. Mike Machita of Primrose caught four, two 14 inches and two 12 inches. Three 17-inch smallmouth bass and two 11-inchers were caught near Leonard's Grove on Tuscarora Creek by Ambrose Hampton of East Waterford. He was using helgramites for bait.

PORTO RICO SUBSCRIBER OFFERS TROUTING HINTS

Writes Wilbur T. Patterson, Angler reader now in Porto Rico:

"Being isolated in the mountainous section of Porto Rico gives me much time to think about fish and fishing, especially trout fishing in the mountains of Pennsylvania.

"These stray thoughts have led to the accumulation of some information which may be of value to the trout fishermen who plan and make their tackle in the winter months. None of the ideas are original, but I have never seen them illustrated in your magazine. To Ray Bergman belongs credit for the novel hook arrangement.

"Hook style A can be used with grasshoppers and crickets. It is better than inserting the hook directly into the insect as the wire allows the insect to swim and act natural.

"Hook B is merely a larger cousin of A and is used for large brown trout and occasionally black bass. As bait for hook B you cannot beat the large size Sphinx moths which can be found around lights in the summer time. I first learned of the use of moths on the East Fork of the Sinnemahoning in Potter County.

"Hook C can be used with larval forms and caterpillars.

"To make these hooks you need only a spool of very fine wire, the desired size of hook, and some metallic-X or any of the new fangled liquid solders.

"For Hooks A and C, it is a matter of sportsmanship to purchase barbless hooks. These two hooks are made in such a small size, especially C, that the trout very often hook themselves deep in the gullet.

"If you have never tried the moth fishing, I would recommend about eight feet of ten pound test gut or heavier. Why? Because the moth will often lift from the water and fly to shore. Of course, this can be eliminated by using a three-foot leader of six to ten pounds test."

LANDS NICE RAINBOW

Cathers Run, in Jefferson County, yielded a fine 14-inch rainbow trout to George Sprankle, of Rossiter, on the opening day of the season. Other catches in Jefferson streams on the first day were Clayton Smith, 15 trout on Sandy Creek; John Handel, 10 trout, Sandy Creek; Harry Bowser, 4 trout, Maple Creek; and Adam Barnoff, 4 trout on Camp Run.

ALLEGHENY CATCHES

While bass fishing on the upper Allegheny River was rather slack during late July and early August, Warden R. C. Bailey of Youngsville reports that a few nice catches were made. A party from Ford City, S. R. Smeltzer, Mr. and Mrs. H. D. Mechling and L. J. Mechling, who camped for one week at Dunn's Eddy made a total catch of 20 nice bass and 31 carp. A. W. Bowser of Blawnox, William Hetrick, Vandergrift, and J. L. Thompson of Blawnox each caught a muskie in the river. The muskies caught by Bowser and Hetrick each measured 23½ inches in length while that of Thompson was just legal, measuring 22½ inches. These fish were caught near Tidioute. Conewango Creek in the northwest sector of the fishing front has been furnishing the best bass fishing to date.

FIRST TROUT HATCHERY IN UNITED STATES

About the year 1871 Dr. J. C. F. Schirner, then a prominent physician in Tamaqua, constructed the first hatchery in the United States for the propagation of brook trout.

The hatchery was located on the Owl Creek on the farm of Dr. Schirner in the Owl Creek Valley, Rahn Township, Schuylkill County, about two miles from Tamaqua, which farm is now owned and conducted by his grandson, Asa F. Schirner. The series of small dams were built along the wooded section of the stream east of the present location of the bungalow of S. R. Beard and south of the present site of Tamaqua Rod and Gun Club, and as the fish grew in size after hatching they were transferred downstream through the series of dams to the largest enclosure. At the end of the dams toward the East was located a stone hatch-house and other small frame buildings used in connection with the hatchery. Calves heads and other meats were suspended in boxes above the water in the dams and allowed to rot and the grubs and worms falling into the water would provide feed for the fish.

Dr. Schirner had arranged for a display of the various sizes of brook trout at the Centennial held in Philadelphia in 1876 and had purchased the glass containers and other apparatus for the display, when shortly before the exhibition was to open some malicious persons, at night time, blew open all of the dams and the entire lot of fish escaped and were lost and this novel exhibition could not be completed. Dr. Schirner's office and residence were located on West Broad Street, Tamaqua, on the same premises now occupied by his daughter, Mrs. Annie L. Lineweaver.

(From Bits of Tamaqua History by S. R. Beard)

TAKES BIG BROOKIE ON DRY FLY

Warden R. C. Bailey of Youngsville reports fine trout fishing in streams of Warren county this year. His report follows:

"Our trout season here has been the best for several years. We haven't found as many anglers on the streams as in previous years but this is no doubt due to the fact that more of them are employed now than heretofore; however the ones that are on the streams are getting some nice catches.

"The Farnsworth has been exceptionally good, also the Four Mile, Six Mile, Cherry Run, Little Brokenstraw and East Branch of Tionesta Creek.

"E. Ross Carlson, Warren, Pa., took an 18½ inch 2½ pound brook trout from Tionesta Creek and Memorial Day we contacted E. A. Keeley of Van, Pa., with a 15-inch brookie taken from Minister Creek. Game Protector L. E. Linder, Warren, took one 17½-inch brownie from Spring Creek.

"Mr. Carlson used a dry fly to lure his 18½-inch brookie, we did not learn the pattern used."

Wardens A. S. Snyder, Anthony Leeh and Russell Womelsdorf With Nets Confiscated This Year on the Susquehanna River

BOARD MEMBER BASS ENTHUSIAST

Removing Bass From the Ellwood City Ponds. Mr. French at Left Side of Net

HON. Charles A. French, of Ellwood City, member of the Board of Fish Commissioners, coming from the section of the state that possibly offers more bass fishing and less trout fishing than any other part of the state, is naturally most interested in the raising of black bass.

"Charlie," as he is known among his many friends, not only believes in it, but actually goes out and puts his own time and efforts into this work. Early last spring, with the support and assistance of some of the local sportsmen, he succeeded in having a W.P.A. project set up for the building of some bass ponds near Ellwood City. After these ponds were built, these bass enthusiasts collected the fry from some brood fish they had been holding in a small pond for some time. Charlie arranged to get a supply of ground fish from some of the Pittsburgh markets, and made daily trips to these bass ponds feeding and wet-nursing his baby bass.

The latter part of October, the ponds were drawn down and a very fine crop of young bass were seined out and planted in the public waters of Lawrence County.

Every time bass work is brought up before the Board, Charlie can always be counted on for his enthusiastic support. The bass waters of Pennsylvania this year have received the finest crop of young bass in many years. They were all raised to the size where they can take care of themselves when planted in the public waters, where it is hoped that they will survive and mature so that our bass fishermen, who enjoy this sport above any other, may reap the full benefit of this work, and all the joys and pleasures that come with this sport, and no little credit will be due Charlie French, and those who assisted him.

Views of the bass ponds are shown on this page.

HUNGER

I want to go fishing! Somewhere on a stream
I want to give way to the longing to dream,
Away from the tumult of motor and mill
I want to be care-free; I want to be still!
I'm weary of doing things; weary of words
I want to be one with the blossom and birds.

I want to push off from the river-kissed shore
Alone with my dreams and my fancies once more.
I am wearying of reading the books on my shelf
I want to be quiet and think for myself.
I've a feeling sometimes of huge things crushing me
And I want to go somewhere and set my soul free.

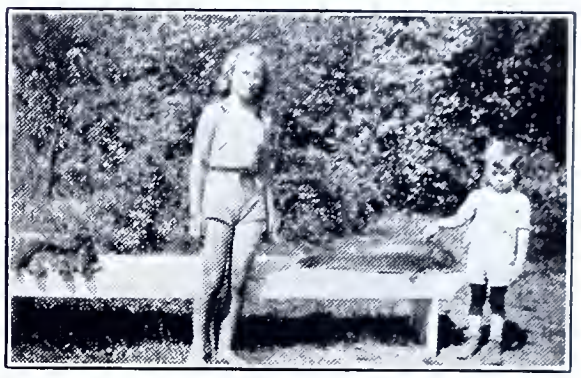
I want to go fishing! To sit all alone
Where only the purest of breezes are blown;
To visit in worlds that are different from ours,
The worlds of the insects, the song birds, the flowers;
To question the skies and the waters below.
To rebuild the body soil in which the soul may grow.

Anonymous

MOUNT CARMEL SPORTSMEN STAGE KEEN CARP CONTEST

Leon Krupa With 26½ Pound Carp Taken by Frank Balchunas

Catch Made on July 27 by Stanley Patricoski



Thomas Patricoski Explains to Eleanor Bridy of Mount Carmel Just How His Dad, Peter Patricoski, Caught This Big Carp

CARP fishermen are taking advantage of the low waters of the Susquehanna River and its tributaries, as low waters confine carp to dam-like sections of sufficient depth for their accommodation. These concentrated areas are filled with carp of all sizes and species, especially the German or King Carp, that have entered during higher waters and are now unable to leave due to shallow water surroundings. These sections are in reality a carp fisherman's paradise.

Hundreds of carp fishermen can be seen daily along the banks of these waters enjoying the thrills of landing the big ones. Reports from various sections of these waters indicate catches from one to twelve carp per day, ranging from six inches to thirty-six inches in length and from one-half pound to thirty pounds in weight. Among the catches are mostly the German or King Carp and the Silver Carp, also a few scattered reports of Saddle Carp and very few reports of Leatherbacks.

Stanley T. Patricoski, the invalid war veteran of Mount Carmel, who made a carp fishing record in 1934, is well on the way towards making another record this year, as up to and including August 5th, he was 22 fish ahead of the 1934 record of the same date. Stanley's record to this date is 81 carp, having a total weight of 718½ pounds. His record for the month of July alone is 38 carp, having a total weight of 310 pounds. These catches consist of all German Carp with the exception of one Saddleback Carp. No silver or leatherback carp were caught by him this year.

Frank Balchunas, a Mount Carmel councilman, points with pride to the large one he landed with the assistance of Leon J. Krupa, also of Mount Carmel, measuring 36½ inches in length and weighing 26½ pounds. Frank has 23 carp to his credit this year having a total weight of 189¾ pounds. Leon J. Krupa has 19 carp to his credit with a total weight of 142 pounds. Leon says "Not bad for a beginner."

Joseph Yeager, secretary of the Mount Carmel Game and Fish Protective Association, is still holding top position in the carp fishing contest conducted by the association, with Charles Neiswender and John Radzai running close seconds.

Leon Krupa Displays His Catch Made on July 20

Stanley Patricoski Made This Catch on July 17 in the North Branch

ANGLING REFLECTIONS

For those individuals who fail to comprehend the attraction fishing has for followers of Izaak Walton, the following lines written by Richard A. Stewart of Clearfield, should merit consideration. You've hit the nail on the head, Dick.

During the trout season thousands of sportsmen and sportswomen followed paths along Pennsylvania streams, pausing now and then to coax the trout to the lure. Being a fisherman I say coaxing, and there is the point. A lot of people say to we fishermen, "Can't see how you can go out and stumble around some mountain stream all day and come home happy without fish."

Sure, we don't always come home with fish, but we bring back something that can't be shown to people, something we get, and value ourselves but of no value to a non-fisherman.

Have you ever noticed how very few fishermen yell because they have not caught something? They just come home with a smile almost as big as if they had the limit of beauties. Those who do the howling would make the rest of the fishermen very happy if they would stay at home. (Not because they get disgusted and loudly disclaim the sport, but because they miss the real enjoyment that can be had with a can of worms and a rod, or stepping higher, a fair collection of flies and a four and a half ounce bamboo.)

There is somethin' about fishing, and the water, and the hills that makes fishing just about the best all around sport there is.

Nothing so aggravates a fisherman as to see the damage that is being done to Pennsylvania streams by the industries that fail to take proper care of the refuse that kills all our water life when the murderous poisons are dumped, without concern, in rivers and streams.

There is probably no better example of this than our own Susquehanna. Seems hardly believable that granddad used to run over to the river when he was a boy and bring home a bushel basket full of fish right here in Clearfield.

Granddad never dreamed that when he was seventy no more fish would swim up and down the West Branch. In fact it wouldn't be true had granddad known this would happen.

Here we are with a stream so filthy that the "kids" can't even swim in it without getting splotches of oil or tar all over their bodies.

We fishermen think some of the pickle-pussed ninnies who can't smile, and have a sour word for one and all, might try a little fishing instead of causing little Mary to ask the neighbor about that no-nox coffee that is guaranteed to cure wife beating.

FRENCH CREEK STILL GOOD FISHING WATER

While a portion of French Creek, famous northwestern Pennsylvania fishing stream, was badly polluted this summer, the following interesting report from Ivan C. Burkley, Secretary of Cambridge Springs Chapter, Crawford County Branch of the Pennsylvania Sportsman's Council, should prove most heartening to those anglers who like to fish this picturesque stream. He writes:

"As secretary of the local chapter of the Sportsmen's Council, I receive a copy of the PENNSYLVANIA ANGLER each month. It is certainly the finest of its kind put out. May it always enjoy a wide circulation.

"After hearing and reading so much about the pollution of French Creek, I'm afraid the impression might be created all over the state that French Creek is done for as far as fishing is concerned. Far be it from such here at Cambridge. The creek here is full of big ones but there is so much natural food in the waters that the catches are not as plentiful as one might expect.

"A short time ago, Bill Boylan, a local man, hauled a 29-inch 6 pound 2 ounce salmon out of French Creek here. Not to be outdone by Billy, Merl Newell hooks a 28 inch, 6 pound 6 ounce baby of the same species. Both these salmon were caught on plugs. Jack Wickwire went after real big fish and caught a 10-pound carp on light tackle. He said that was real fun.

"Joe Boinski, a lad of 13 years, caught a real nice black bass when he hooked onto his three-pounder. A spinner did the trick. Other fortunate anglers here are Paul Woodring and his sons, Stanley and Donald, Charley Rodemaker, Carl Jones, Clyde Jones, A. V. Sundean and Alvie Wheelock."

More Carp Entered in the Mount Carmel Contest. Clement Yeager, Left, and John Radsai With Their Catches

BIG WALLEYE

Bob Jacobs of Johnstown, R. D. 1, is evincing considerable pride in displaying the catch of fish in the accompanying illustration, and with just cause. Recently while fishing in the Aughwick Creek, Fulton County, Bob landed the largest pike, which measured 27 inches in length and weighed 5 pounds, 1 ounce, another pike 18 inches in length, and a good catch of rock bass and sunfish. Warden Charley Long reported the catch.

Jest last week I ketched thet ol' buck mink in my log set over to the trout run. He was a dandy, nigh onter 32 inches long an' dark. I been trappin' fer him a right long time, an' I reckon I helped them trout no end in the run. Come low water, he allus took his share o' fish an' then some.

Speakin' o' these here varmints thet's hard on fish, mebbe we been overlookin' a bad un. These here snappin' tortles now is jest about tops when it comes ter killin'. A snapper weighin' mebbe only 15 pounds kin ketch more fish in a season than a dozen watersnakes. Seems like he ain't never satisfied. Worst part o' ketchin' 'em is thet the ornery cusses ginerally stays under some slopin' bank durin' the day, er in some weed bed an' then feeds at night.

Every so often a feller kin hook inter one o' the critters ef he's fishin' fer eels, an' I hed a real tussle one night last summer in the dark o' the moon with a snapper thet weighed a little better'n 20 pounds. Ketched him right at the breast o' the old mill dam. He made most powerful good soup, fer he was jest in the prime o' shape.

Jest let a couple of them snappers git inter a good size pond, an' it sure will surprise you the way the fish starts gittin' scarce. I ain't missed a chance in a long spell o' killin' the critters wheniver I kin.

URGES SAVING OF SMALL FISH

In the following fine letter to the Williamsport Sun, John W. Jacobs, ardent Williamsport angler and conservationist, advances some mighty good dope right in line with the better fishing program. His letter follows:

Saving Small Bass

May I ask for a bit of your valuable space in the hopes that by again breaking into print I may be able to save a few fish for other seasons? It is almost an axiom that no matter how heavily the state stocks fish, if careless or wilfully vicious anglers kill small fish there will be no success in stocking. This was called forcibly to my attention this week, when I was talking to a young man who with another older man had been fishing in Lycoming Creek. I asked him what he had taken and he said, "Oh,

about ten bass, all seven or eight inches." Another question showed that he had taken them on worms and other bait and in nearly every case the bass had swallowed the hook. "And then you just pulled the hook out through the fish's gills and threw the fish back," I asked the young man and he replied, "Sure we did."

Well, just figure it out for yourself. Here were two men fishing. They caught ten undersized bass and perhaps, through rough handling everyone is dead or will die. For if once you tear the gills of a small bass and he bleeds, it's goodbye to that fish. I urged this young man in future to cut off his hook a few inches above the mouth of the fish, proving to him that the bass could live and grow despite the fact that he carried a hook. Numerous cases can be cited where bass have been taken with two or more hooks in their throats.

That's the why of this letter, fellow fishermen. May you all come to be sportsmen as well as sports and save the fish for someone else, instead of killing them. I realize, of course, that hooks cost money, but fellows, it's a cheap investment to waste a hook and save the life of a nice bass. Perhaps hundreds of bass will breed from one which you save. Think it over. The State Fish Commission urges all of us who fish to conserve fish life.

Another hint. When you catch a small fish, do not grab him up and take out the hook until you use a little caution. Wet your left hand, then take up the fish and take the hook out easily, laying the fish back into the water. You will have a deal more pleasure in seeing him scoot away than in watching him turn slowly over on his side and kick his life away.

So in conclusion I again ask: Iet's all be not only sports, but sportsmen.

Yours for better fishing.

JOHN W. JACOBS.

PENNSYLVANIA RECORD FISH FOR 1936

(Continued from page 3)

for 1936. When a 7 pound 5 ounce largemouth is taken, brother anglers, that's fishing news of the first water. Immediately upon receiving word of this catch, we wrote to John P. Hosier, Easton, R. D. 2, who made the catch. We quote his reply:

"On the fishing trip to Stillwater on August 13, I was accompanied by William Hutchison of Hazelton and my daughter, Mrs. Elizabeth Rhoades of Easton. We had been fishing about three hours and were getting a few strikes that did not amount to much. I never did care about taking a lot of little fish, so I told my side-kicker, Hutchison, to row over to a nice looking spot and we anchored the boat. Here is where I get a five-pounder, I thought. But on the first cast, that big fellow hit the plug and I saw him when I hooked him.

" 'Bill, get the net, I have hold of him or he has me,' I said, and then he made for the stumps. I had to stop him and get him back in the deep water. Then he made a race for the boat, got under it and got the line around the anchor chain. But I got him out of that tangle and in the deep water again. Then he turned over on his side and the sun shone on him. Think he was the nicest fish I ever saw.

" 'Now, Bill,' I said, 'get that net down and don't miss that fish or there will be a murder on the lake.' Finally we got him in the boat and I had the one I had fished for for over 60 years. I would be satisfied to fish that long again for another one like him. I was using a steel casting rod, casting reel, 18-pound test line and plug. The fish was 23½ inches long and had a girth of 17½ inches."

While Hosier's catch topped other catches in this division, many big largemouths were taken by Pennsylvania anglers. Charles Madenford of Pine Grove scored with a largemouth 23¼ inches in length, weighing 6 pounds, in Sweet Arrow Lake, Schuylkill County. H. G. Brennan, president of the Primrose Fish and Game Association of near Pottsville, is reported to have caught a 21-inch 6 pound largemouth bass.

Runner-up in this division was a largemouth, which pressed Hosier's catch closely. While fishing in Spring Lake near Wyalusing, Bradford County, Edward Peffer of Wyalusing landed a 23½-inch largemouth, having a girth of 15½ inches and weighing 7 pounds. It was taken on a live frog. He was assisted in landing this fish by Dr. M. P. Allis of Lewistown. Conneaut Lake in Crawford County yielded some big largemouth bass this year. A largemouth weighing 5 pounds 4 ounces, 20½ inches in length, was caught by Harry Benninhoff of Meadville in the lake on July 23. Two largemouths, each tipping the scales at 4 pounds 12 ounces were taken by Carl Colman, Meadville, R. D. 3, and H. L. Onspaugh of Meadville.

Smallmouth Bass

The Upper Allegheny River furnished some of the finest smallmouth bass fishing in the state this year, and it is therefore fitting that the largest smallmouth reported should have been taken from this great stream. John Ewing of Tarentum scored the catch while plug casting at Engle's Eddy near Tidioute. His catch, measuring 21½ inches, weighed 5 pounds, one ounce.

From the same sector of the bass fishing front, Conewango Creek, a 21-inch smallmouth bass weighing 4 pounds 6 ounces was taken near North Warren on a crayfish by R. B. Dalrymple of Warren. Lou Lauderbach and Ray Lauderbach of Beaver Falls made a fine catch of smallmouths at Kirkpatrick's Eddy on the Allegheny, the largest measuring 19 inches and weighing 4 pounds. Many fighting smallmouths ranging in weight from two to four pounds were taken on this stream.

A Conneaut Lake smallmouth taken by William Hughes of Conneaut Lake Park was runner-up in this division. It measured 20½ inches in length, weighed 4 pounds 14 ounces, and was taken on plug.

Rivaling the Allegheny as a producer of big smallmouth bass this year was the Conodoguinet Creek in Cumberland County. Charles K. Fox, one of the most expert bait casters in the state, caught a smallmouth bass at Kauffman's Point on the Conodoguinet that measured 20 inches in length and weighed 4 pounds 4 ounces. A 21-inch bass caught at the same spot by William S. Taylor of New Cumberland weighed 4 pounds 3 ounces. Many bass weighing from two to well over three pounds were taken in the Cumberland County stream.

Wall-Eyed Pike and Pickerel

Catches of wall-eyed pike or Susquehanna salmon were numerous this year in many sections of the state. That the wall-eyed pike are staging a comeback is apparent. Largest of this species to be reported was a 27-inch wall-eye weighing 8 pounds and 4 ounces caught at Safe Harbor Dam on the lower Susquehanna by Max Nettke of Lancaster. It was taken below the turbines of the dam on a red and white jointed plug. French Creek yielded a 28-inch pike weighing 6 pounds 7 ounces on July 3 to Ted Finney of Meadville. It was taken on a spinner and night crawler trolling combination.

D. W. Erb, 70 years old, of Valley View, caught a 30-inch wall-eyed pike in Tuscarora Creek near Port Royal while fishing live bait. His catch weighed 6 pounds. The Aughwick Creek in Huntingdon County produced the runner-up fish taken in this division on November 3. It was a wall-eye weighing 8 pounds and measuring 30¼ inches in length, and was caught by Raymond Shoop of Fannettsburg, Franklin County.

In addition to yielding the record brown trout of the year, Pike County produced the largest pickerel reported. Fishing in Peeks Pond on July 15 Harry Fuls of Bangor caught a pickerel measuring 28½ inches in length and weighing 5 pounds 10 ounces. Returning to the pond on August 4, he made an amazing pickerel catch, six fish, ranging in length from 17½ to 26½ inches, and

An Albino Brook Trout at the Bellefonte Hatchery

having a combined weight of 23½ pounds. The largest pickerel in this catch weighed 5 pounds and was runner-up for honors in this division.

Classed as "big game" for Pennsylvania fishermen are giant cousins of the pickerel, muskellunge, found in a few lakes of northwestern Pennsylvania. Lake LeBoeuf in Erie County furnished some notable muskie catches this year, the largest fish of this species reported having been taken from this lake. Measuring 46 inches in length and weighing 22 pounds, it was caught while trolling with large natural bait by K. Miller of Pittsburgh. E. J. Hines of Iron City caught a 20-pound muskie, runner-up in the division. It measured 42 inches in length.

GET A REPUTATION

(Continued from page 9)

"Chances are your hook broke one of the times you hit that rock," he said and I took his word for it. All that casting with a broken hook!

Now began my first lesson on the stream, one that lasted all day with my friend beside me taking turns at the holes. First of all he relieved me of the trouble of trying to land the fly right side up. He put on a bivisible for me and it didn't matter much which way it landed. And it rode high, wide and handsome at all times. It is the fly for the beginner until he gets the hang of things.

Then he showed me what was wrong with my casting—how to use the wrist with only the slightest movement in the forearm, and how to keep the rod tip high, to cast for a spot above the water and let the fly settle down gently from there and many other things which I hope to conquer in years to come. And finally, how to select the proper current so that the fly will float naturally without the line dragging it across the water.

Those things were minor—you might call them the simple technique part of the game. And then you have to know where to pick your holes, what part to fish, what flies to use and ten billion other little tricks of the trade. After that, you may catch a trout.

To illustrate some points in my lesson, my friend pointed out a spot in the stream. It didn't look so hot to me and besides, some brush made it impossible to cast into it. I should have said, made it impossible for me to cast into it. My friend made a couple of false casts and then, without any apparent effort, his fly landed in the bullseye, in under the brush and splash—strike—a thrilling battle and he netted a dandy pound brownie.

"Now you try it after a few moments," he advised.

Well, it looked easy and so I did. The only difference was that I didn't hit the bullseye—my fly landed two feet too high in the brush. That was luck for me, however, because I carefully pulled in the line until the fly dropped off onto the water. A fish struck and so did I and I had caught my first Neversink trout on a fly.

"You did that perfectly!" the expert flattered me.

The only difference was that my trout would measure about seven inches, so I reluctantly but bravely let him go again—my first one, too!

Things went like that all day. I managed to save enough for a meal at home—one apiece for four of us—while my friend was catching and putting back those big ones.

On the way home I felt pretty guilty. I had made a dub of myself, after all, and no doubt spoiled the expert's trip. It took more than an inspiration and a resolution to become a member of the select group and get a reputation.

You can imagine my surprise when, on parting, he said to me:

"Fred, this was one of the most enjoyable fishing trips I have had in a long time. I didn't have to uphold any reputation—I didn't have to work hard to beat anybody—I could take it easy and do as I pleased. I've had a peach of a time and what say—let's do it again?"

Well, us dubs have a better time after all—let somebody else fight to get and to uphold a reputation. Me—I want to enjoy my fishing.

There is a growing tendency with our sportsmen anglers to steer clear of small tributary streams to major trout waters. These streams are nature's incubators for the trout. For every six-inch fish taken from such waters, five or even ten undersize trout may be hooked and injured so severely that they may die. Fish the bigger waters for bigger trout.

The first record of a carp taken in the Great Lakes fisheries is that of a fish taken in a pound net in Lake Erie near Monroe, Michigan, in 1883. At the present time the catch of carp on the grounds off Monroe exceeds that of all native species combined.

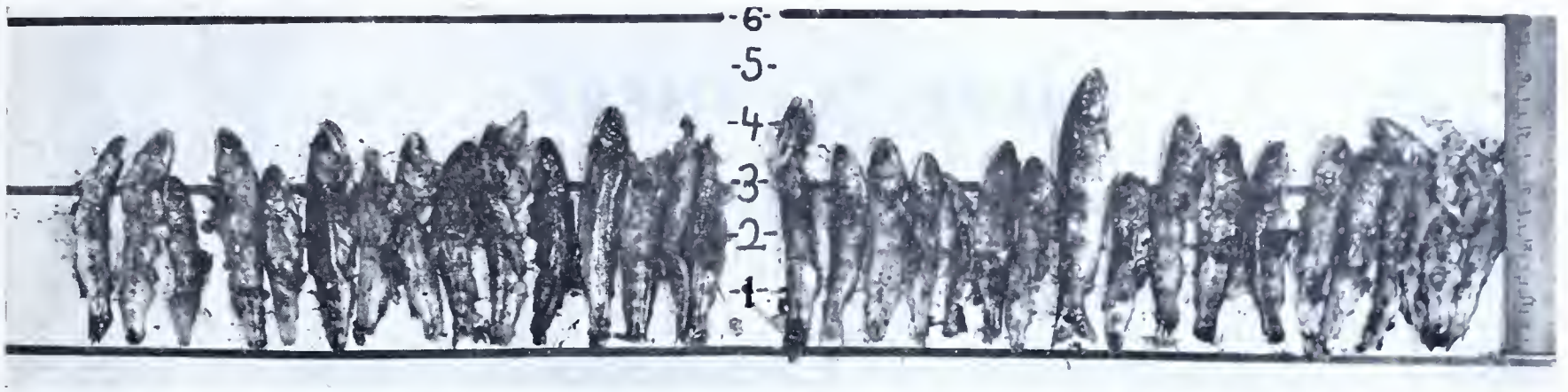
"Fair Play" Poster of the Venango County Rod and Gun Club

VETERAN ANGLER URGES STREAM IMPROVEMENT

The ANGLER recently received a letter from F. J. Horn of Galeton, Potter county, that, from a practical point of view, offers plenty of food for thought. Fifty years of fishing on North Tier trout waters and careful observation makes his letter not only meaty but deserving of real consideration by our trout fishermen. It follows:

"I have read several articles in the PENNSYLVANIA ANGLER on stream improvement and would like to express my views on this most important subject. I began my fishing about fifty years ago in Potter County, and have fished many days each year on the same streams. Many of my favorite streams have dried up. As a small boy I always fished the small streams but as I grew older I took to the larger streams for larger fish.

"I found the larger fish moved downstream during the winter and would be found in larger streams. The South Woods and Prouty were two of my favorite streams. I walked over the hills from Austin, where my people lived. I saw the timber stripped from the hills, then the forest fires finished the job, so there was in some places not a tree two inches in diameter left. I noticed where I had roamed in my earlier days on a carpet of leaves and moss, it was now hard stony side hills. Here when it rained the water would run off like water off a duck's back and in twenty-four hours the stream I had fished was a roaring torrent; in other words a flood had started. Trees, stumps and logs came downstream, tearing the banks on both sides and the banks spread out wider. I noticed where



Six Fishermen Were Caught on the Headwaters of the Tangascootac Creek in Clinton County This Year with 74 Undersize Brook Trout by Warden George Cross. They were Fined $2965 For Their Catch, Part of Which Are Shown Here Beside a 6-Inch Ruler

I had fished a mile in order to catch forty trout it was now necessary to fish a mile and a half to catch the same number. The cause was the lack of good pools, and no deep riffles where I always got the nicest trout. As time went on I noticed it was getting worse at some places; where in five hundred feet there had been twenty good pools five or six years before there was now nothing but shallow riffles and water not much more than four or five inches deep. Then I started to figure where the fish would go to spawn. I found they had moved up into the small streams where the floods had not torn out the pools. Next I noticed these small streams dried up and the fish died for want of water. Many a day some of us took pails and moved fish down into larger water. Then I had the good luck to get acquainted with a man who had been raising fish. From him I learned what time of year the fish laid their eggs and that in January most of the eggs of trout in cold spring water hatched. I found out it was a matter of keeping eggs clean which brought the best results in trout hatching. I also noticed that in January we always had floods. How could eggs hatch in the streams where the water carried large stones and gravel for miles and deposited them in the curves of the stream? How could eggs hatch that were rolled and tossed and buried by floods? Many a time I asked myself these questions and what could be done about it. My answer was stream improvement, but how and by whom? I talked on this subject at a meeting of sportsmen at the time the Black Forest Conservation Association was organized in Potter County. Many of the sportsmen gave me the laugh for saying such things. My next move was to get about forty Boy Scouts and try out my plan. We worked two days on a small stream building dams and planting willows. We put old tree tops in the dams so no one could fish the dams and the fish would have a place to breed. Later in the summer we went again to do some more work.

"Here is what we found. The willows had been pulled up and the old tree tops taken out. The dams drained and the fish taken out. This discouraged the boys so we quit and had a good outing instead of working. The Fish Commission closed the small streams for breeding purposes. This made good fishing for the outlaw who took a chance of being arrested. It was easy picking as most every fisherman wanted these streams for breeding and would not fish them.

"We had very few wardens at that time so there was not much danger of getting caught. In the last ten years I have studied the facts of stream improvement and find it is a matter which must be done in a scientific way. I noticed the work done by the CCC boys, some of which is good. Still if not more care is used it may mean spoiling the larger streams for trout.

"For example, I noticed dams built where the best of riffles had been for fish food to breed. This not only spoils the fish food but warms the water too much, and if too many dams are built the water will become too warm for trout. Now here is my idea of what should be done. Study the stream as to food, shade, springs and the water flow before work on stream improvement is started. Nature never built dams on the trout streams. Nature built falls. Trees fell across the streams; in falling they broke into where the creek bed was low, always leaving an opening in the center of the stream. Trees falling downstream soon became the bank and made ideal places for trout to live and hide under. Large trees caused the curves in the streams and as the water crossed back and forth made ideal places for fish to hide and spawn. I think man, when doing the work, should copy as nearly as possible the way Nature did it. Building a cribbing halfway across the stream on one side and below again on the opposite side will speed up the water and at the same time build pools for fish. Where cold spring water flows into the stream build a spawning place by building a long cribbing on the same side of the stream and just below where the cold water enters. Then a small dam at the lower end of the cribbing will do the trick. Plant fast growing trees on banks for shade. Plant in such a way that they will grow over the pool and make this breeding pool a hard place to fish. What did the beaver do for our trout? I also studied their work and found they did more harm than good. They were unable to build in the large streams and have their dams stand the floods so they went up into the small or breeding streams. At first I though this was fine. While hunting I saw many a beaver dam with two or three hundred nice trout in it—a good place to stay with plenty of water.

"Then in the summer I noticed no spawn in the streams above the dams. What was the cause? I figured the beaver swimming under the ice in winter kept the mud stirred up, this mud settled on the trout eggs and none of them hatched, as eggs must be kept clean.

"My advice is to study the stream and nature of fish before doing too much work as it may do more harm than good."

According to Special Warden Clifton Iman of Evans City, Thorn Creek in Butler County provided fine early season trouting for sportsmen in Western Pennsylvania. Felix Gobert of Pittsburgh caught eight brown trout, Joe Gretch, Tarentum, 12 brown, Val Bridenbaugh, Millvale, R. D., five brown and five rainbow trout, George Lippert, Pittsburg, eight browns, and Dave White, Renfrew, a brownie 19 inches in length.

HERE AND THERE IN ANGLERDOM

Fishermen in Bedford County are having fine luck with wall-eyed pike and bass this fall, reports Warden Harry Moore. Seven pike, ranging from 16 to 20 inches in length, were caught in Hopewell Dam by Robert Browell, of Hopewell. Oliver Pauley, of Windber, Cambria County deputy game protector, caught a smallmouth bass on Lake Gordon that measured 19 inches in length and 14 inches in girth.

A new use for a fishing rod has been discovered by Dr. Robert P. Banks, of Mifflintown, according to Warden C. V. Long, of East Waterford. While fishing with his wife and sons last summer on Tuscarora Creek, Dr. Banks saw a watersnake near him in the middle of the stream. Not having any other weapon handy, Dr. Banks began striking at the snake with the fishing rod. The snake tried to escape towards the shore but was killed by the doctor's sons, who, armed with stones, were standing on the bank.

A number of fine bass were caught in the southeastern part of the state, according to Warden Harry Z. Cole. On Saturday, October 24, a fisherman plugging on the Skippack Creek landed three bass, one 18 inches, another 16 inches, and the third 12 inches. On October 12, Mrs. J. A. Haage, Reading, landed a 19-inch largemouth bass while fishing in the Perkiomen Creek with night crawlers for bait. Another catch made in Perkiomen Creek was that of a 19¼ inch smallmouth bass by Abram Markley, Schwenksville. Mr. Markley used a tadpole as bait. In the same class of large bass was the 18¼ inch smallmouth which George Buttrey of Sellersville, landed from the Neshaminy Creek, using a helgramite for bait.

Two sportsmen in the vicinity of Hopewell certainly believe in making the trout streams safe for trout. To date, this year, they have killed 565 watersnakes. During one month, the two of them killed 210 watersnakes, Douglas Stull accounting for 110 snakes, while William Eller killed 100, according to a report received from Warden Harry Moore.

Warden J. H. Simmons, of Rochester, reports catches of different species of fish in his section of the state. Real catches of carp were made in Little Beaver Creek, while a 17½ inch bass was caught near Darlington by a fisherman from Beaver. Two Rochester girls, Miss Mary Louise Alleman and Mrs. Jack Yellan each caught a muskellunge in Edinboro Lake. Miss Alleman's weighed six pounds and measured 28

O. H. Danner of Lincolnville With a Muskie Caught in Conneaut Lake

inches, while Mrs. Yellan's was 29¾ inches in length and weighed 7 pounds.

A cold and rainy day in 1935 brought success to George W. Shope, of Bellwood, while fishing for trout in Fishing Creek. He caught two beautiful big brown trout on the same day, one measuring 21 inches and the other 22 inches. They had a combined weight of seven pounds.

Two Williamsport men made fine catches of bass and salmon earlier in the season, according to Warden Carl A. Bidelspacher of that city. George R. Hasenplugh, 510 Glenwood Ave., returned from a fishing trip to the North Branch of the Susquehanna, displaying a 25-inch Susquehanna salmon, which he had hooked with an artificial bass bug. M. M. Dailey, the other angler, caught a 19-inch bass weighing nearly three pounds in Pine Creek. He used live bait.

Warden David Dahlgren reported a number of fine catches of trout last spring in the section around Philipsburg. J. Bickel, Lock Haven, caught two rainbows and eight browns in Elk Creek on the opening day. Charles Prebosky, Moshannon, caught two rainbows and eight browns on Black Moshannon Creek. Other good catches were made by John Cresinger, Mill Hall, F. A. Wadsworth, Lock Haven, William Fenton, Pleasant Hall, and Pete Hanson, Lanse. He also told about a catch of nine suckers from Penns Creek by W. C. Hossenplug of Spring Mills.

James W. Melius, of Wood Vale, not only caught two fine brown trout but a sucker on the same trip. The brown trout measured 22 inches and 18 inches, respectively. One of the brown trout was holding a nine-inch sucker in its mouth.

Suckers have just commenced to bite in the Yellow Breeches Creek, according to Warden George James of Carlisle. He also says that the streams are in better condition than they have been for years. Heavy stocking of trout and bass in that section has been carried on this fall.

Philip Guillot, of Bushkill, caught a brown trout measuring 20 inches in length and weighing 2 pounds 7 ounces in Little Bushkill Creek. Philip, who is fourteen years old, caught this big fish on a night crawler. Warden Frank Brink of Milford reported the catch.

Fishing in the North Branch of the Susquehanna River near Rupert, Columbia County, Andy Kessock of Frackville, caught two fine bass, each over 16 inches long, and a Susquehanna salmon 20 inches long. This catch was made on a plug in the latter part of October, according to Steve Billie of Frackville. "Bass fishing was good this year along the river," says Mr. Billie. "Out of three trips, we scored with nine bass, one salmon—the smallest bass was 12 inches long."

Fishing "crabs" or crawfish, Bob Williams of Tarentum made a catch on the Allegheny River of nine smallmouth bass and one rock bass, the nine smallmouths having a total weight of 11 pounds, according to Warden R. C. Bailey of Youngsville. John Woods of Clearfield caught two 20-inch smallmouths, which Bailey estimated would have weighed from 4 to 4½ pounds apiece. Plug casting yielded a 21-inch smallmouth bass and a 29-inch muskie to Clarence Foster of Coraopolis. Foster made his catch near Tidioute, while Woods was fishing near Kinzua. Louis and Ray Lauderbach of Beaver Falls caught 6 smallmouth bass from the Allegheny at Kirkpatricks Eddy. One, 19 inches, weighed 4 pounds, another 17 inches tipped the scales at 3½ pounds. Plugs scored the catch.

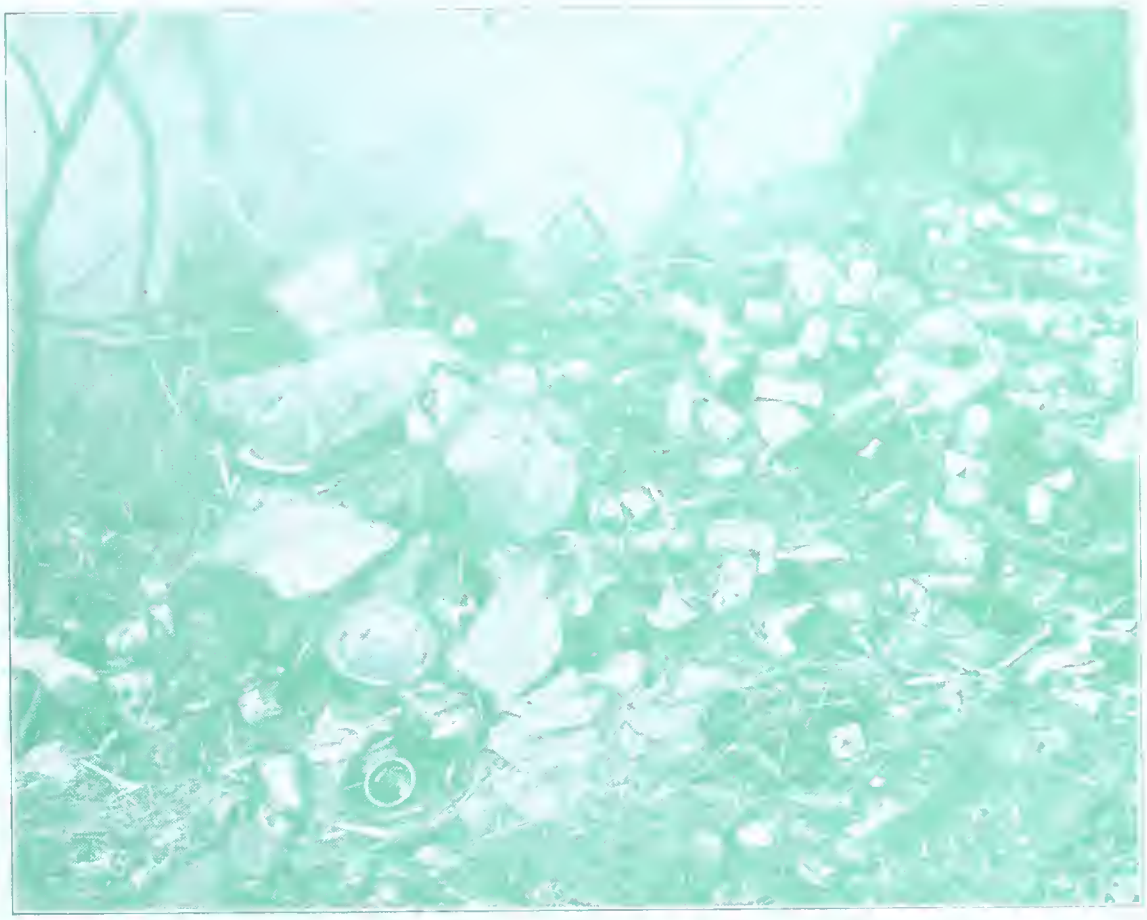


Photo by [illegible]

Montgomery County Sportsmen Have United in a Determined Effort to
Halt the Practise of Placing Junk Heaps Along The Streams.
Here is Shown One of These Eye-Sores on the
Banks of Beautiful Perkiomen Creek.

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